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Adviser's Guide to Health Care, Volume 2: Consulting Services

Robert James Cimasi

Todd A. Zigrang

The Adviser's Guide to Healthcare, Second Edition is a comprehensive resource and reference guide for professionals seeking a working knowledge of the myriad factors involved in consulting with and valuing healthcare practices. Developed by two of the foremost consultants in the healthcare industry, Robert James Cimasi and Todd A. Zigrang, this *Guide* is founded on their seasoned knowledge and industry experience. This 18-chapter, two-volume set is built around a new taxonomy framework for approaching economic value for the healthcare industry—the *Four Pillars* of reimbursement, regulation, competition, and technology. The *Four Pillars* framework is carried throughout each of the two volumes that comprise this book:

Volume I: An Era of Reform—The Four Pillars provides in-depth discussions of the *Four Pillars*, the reimbursement environment, the regulatory environment, the impact of the competitive forces, technology, and the landmark legislation that has contributed to the current healthcare environment.

Volume II: Consulting Services introduces different models of emerging healthcare organizations, details industry subspecialties in terms of the *Four Pillars* framework, and addresses issues related to consulting services for healthcare practices, including valuation services for enterprises, assets, and services.

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The complex organizational structures of the U.S. healthcare delivery system continue to evolve, increasing the demand for consulting services to help healthcare practices navigate industry obstacles that confidently translate healthcare consulting theory into practice within this complex environment. Advise your healthcare professional clients confidently with the consulting expertise in *Consulting Services*, Volume II of *AICPA's Adviser's Guide to Healthcare, Second Edition*. This detailed reference tool provides you with a comprehensive understanding of medical specialty practices. *Consulting Services* is your one-stop source for navigating the current and emerging trends in the healthcare practice arena.

In this volume, you will find:

- A primer on consulting and advising strategies for healthcare industry clients.
- Benchmarking strategies for healthcare practice and valuation of healthcare industry businesses.
- Compensation and income distribution strategies.
- Financial valuation of healthcare enterprises, assets, and services.
- Physician practice analyses.
- A new paradigm for organizational structures of healthcare service delivery.

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The Adviser's Guide to HEALTH CARE

SECOND EDITION VOLUME II

Consulting Services

Robert James Cimasi, MHA, ASA, MCBA, FRICS, CVA, CM&AA
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The Adviser's Guide to HEALTH CARE

SECOND EDITION VOLUME II

Consulting Services

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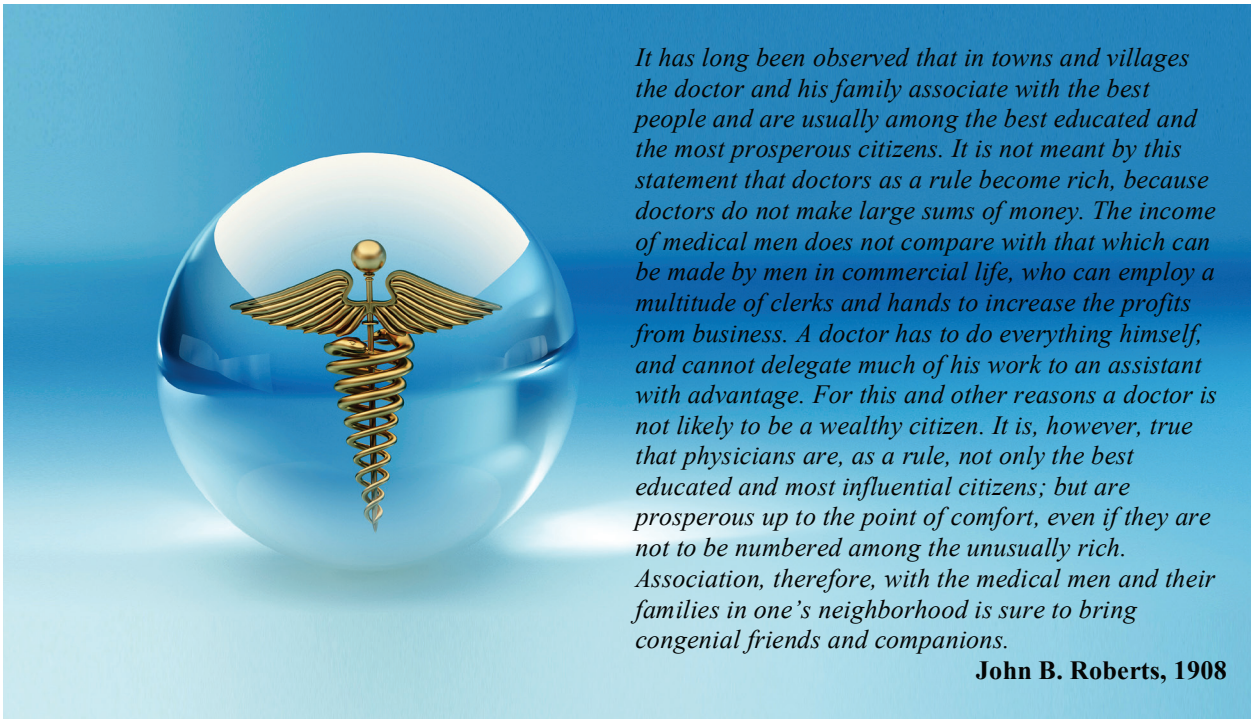
Chapter 1

Healthcare Consulting



It has long been observed that in towns and villages the doctor and his family associate with the best people and are usually among the best educated and the most prosperous citizens. It is not meant by this statement that doctors as a rule become rich, because doctors do not make large sums of money. The income of medical men does not compare with that which can be made by men in commercial life, who can employ a multitude of clerks and hands to increase the profits from business. A doctor has to do everything himself, and cannot delegate much of his work to an assistant with advantage. For this and other reasons a doctor is not likely to be a wealthy citizen. It is, however, true that physicians are, as a rule, not only the best educated and most influential citizens; but are prosperous up to the point of comfort, even if they are not to be numbered among the unusually rich. Association, therefore, with the medical men and their families in one's neighborhood is sure to bring congenial friends and companions.

John B. Roberts, 1908

KEY TERMS

Audit
Benchmarking
Charge Description Master
Charting
Clients
Coding
Complex or Compound
Corporate Compliance Services
Employee Retirement and Income Security Act
Fee Arrangements
Forecasting
Management Advisory Services
Organizational Development
Practice Management
Presentation
Prospects
Qualified Domestic Relations Orders (QDRO)
Risk Management
Strategic Initiatives
Summarization
Suspects
Tactical Plans
Targets
"Tick and Tie"
Valuation
Vision

Key Concept	Definition	Citation	Concept Mentioned on Page #
401(k) Safe Harbor Notices and Internal Revenue Service or NCDR Notice of Change to Director's Rules Letters	A written notice provided by an employer participating in a 401(k) safe harbor plan to employees similarly involved of the employee's rights and obligations under the plan, the safe harbor method in use, and how eligible employees can make electors, as well as other plans involved. There are also timing and content requirements.	"401(k) Resource Guide—Plan Sponsors—401(k) Plan Overview" United States Internal Revenue Service, http://www.irs.gov/Retirement-Plans/Plan-Sponsor/401k-Resource-Guide-Plan-Sponsors-401k-Plan-Overview (Accessed 3/26/15).	21
Accredited in Business Valuation (ABV)	ABV designation is awarded to CPAs who demonstrate (1) AICPA membership and good standing, (2) valid and unrevoked CPA certification, (3) a passing score on the ABV examination, (4) payment of the $350 credentialing fee, and (5) meet recertification requirements.	"Mission and Objectives of the ABV Program" By the American Institute of Certified Public Accountants, 2010, http://fvs.aicpa.org/Memberships/Mission+and+Objectives+of+the+ABV+Credential+Program.htm (Accessed 3/18/10); "A Guide to the AICPA Accredited in Business Valuation Credential," by the AICPA, 2010, http://fvs.aicpa.org/NR/rdonlyres/6F13D4DC-97EF-4F0F-88B2-42F3562D3A63/0/ABV_application_kitfinal_012710.pdf (Accessed 3/18/10).	36
Accredited Member (AM)	AM accreditation from the American Society of Appraisers is available to valuation professionals with at least two years of full-time appraisal experience, have passed an ethics exam and the National Uniform Standards of Professional Appraisal Practice exam, and have provided proof of education, an appraisal experience log, and appraisal reports.	"The ASA Membership and Accreditation Process" American Society of Appraisers, www.appraisers.org/Membership/join-asa (Accessed 2/17/15).	37
Accredited Senior Appraiser (ASA)	The ASA designation, awarded by the American Society of Appraisers, designates appraisers who are held not only to a Society standard of ethics, but also to standards of professional practice promulgated by the Appraisal Foundation. Requisites for this designation include extensive coursework and testing to build a solid knowledge foundation, thorough peer-evaluation of appraisal reports, and 10,000 hours (or five years) of experience to receive the ASA designation.	"The ASA Membership and Accreditation Process" American Society of Appraisers, www.appraisers.org/Membership/join-asa (Accessed 2/17/15); "Why Choose ASA" American Society of Appraisers, http://www.appraisers.org/Membership/why-choose-asa (Accessed 3/2/15).	37
Analysis Tools Used in an Engagement	(1) summarization, (2) benchmarking, (3) forecasting, and (4) complex or compound	N/A	32–33
Certified Business Appraiser (CBA)	CBA designation, recognized by Institute of Business Appraisers, suggests that the holder excelled at completing a rigorous review process. Requisites include that the applicant hold a four-year college degree or equivalent; must have completed at least ninety classroom hours of upper level course work, at least twenty-four of which were courses provided by the IBA; and must have completed a five-hour, proctored CBA written exam covering the theory and practice of business accreditation, as well as peer review of demonstration business appraisal reports.	"CBA/MCBA Applicant's Handbook" Institute of Business Appraisers, June 2014, www.go-iba.org/files/CBA_MCBA_Applicants_Handbook_4-25-14_Final.pdf (Accessed 2/27/15).	37–38

Key Concept	Definition	Citation	Concept Mentioned on Page #
Certified Coding Associate (CCA)	The CCA credential distinguishes coders by exhibiting commitment and demonstrating coding competencies across all settings, including both hospitals and physician practices. CCA examination candidates must have a high school diploma or equivalent and, although not required, at least six months of coding experience.	"Certified Coding Associate (CCA®)," American Health Information Management Association, http://ahima.org/certifications/cca (Accessed 2/27/15).	43
Certified Coding Specialist (CCS)	CCSs are professionals skilled in classifying medical data from patient records, generally in the hospital setting.	"Commission on Certification for Health Informatics and Information Management (CCHIIM) Candidate Guide," American Health Information Management Association, http://www.ahima.org/~/media/AHIMA/Files/Certification/Candidate_Guide.ashx (Accessed 2/27/15).	43
Certified Health Data Analyst (CHDA)	Awarded by The American Health Information Management Association, CHDA certification designates professionals who have demonstrated expertise in health data analysis, including clinical, financial, and operational data. Candidates must successfully complete a three and a half hour comprehensive exam.	"AHIMA Home - American Health Information Management Association" American Health Information Management Association, http:// http://www.ahima.org/certification/chda (Accessed 2/27/15); "Certified Health Data Analyst (CHDA) Examination Content Outline" American Health Information Management Association, http://www.ahima.org/~/media/AHIMA/Files/Certification/CHDA_Content_Outline.ashx?la=en (Accessed 2/27/15).	44
Certified Healthcare Business Consultant (CHBC)	National Society of Certified Healthcare Business Consultants (NSCHBC) members may become a CHBC by passing a NSCHBC examination, demonstrating an understanding of the "total healthcare business environment—both practice and financial management."	"Certification" National Society of Certified Healthcare Business Consultants, www.nchbc.org/certification/index.cfm (Accessed 3/2/15); "Membership," National Society of Certified Healthcare Business Consultants, www.nschbc.org/membership/index.cfm (Accessed 3/2/15).	42
Certified Healthcare Financial Professional (CHFP)	CHFP® is designed for mid-level healthcare finance professionals who aspire to the executive level or desire confirmation of financial management expertise in US healthcare. CHFP certification demonstrates qualifications related to the profession, as well as the maintenance of up-to-date skills and knowledge. The CHFP designation is available to Healthcare Financial Management Association (HFMA) members following successful completion of the CHFP examination.	"Certification" Healthcare Financial Management Association, http://www.hfma.org/Content.aspx?id=508 (Accessed 3/2/15);	41–42
Certified in Healthcare Privacy and Security (CHPS)	This certification demonstrates a concentration on the privacy and security aspects of health information management and signifies competence in the design, implementation, and administration of comprehensive security and privacy programs in various healthcare organizations.	"Certified in Healthcare Privacy and Security (CHPS®)" American Health Information Management Association, http://ahima.org/certifications/chps (Accessed 2/27/15).	43–44

(continued)

Key Concept	Definition	Citation	Concept Mentioned on Page #
Certified Merger & Acquisition Advisor Certification (CM&AA)	The Alliance of Merger & Acquisition Advisors awards the CM&AA designation to professionals who have mastered practical expertise in middle market corporate financial advisory and transaction services. Candidates must complete an intensive five-day training program and a comprehensive exam to receive this designation.	"AM&AA: Alliance of Merger & Acquisition Advisors" Alliance of Merger and Acquisition Advisors, www.amaaonline.com/cmaa (Accessed 2/27/15).	40
Certified Physician Executive (CPE)	Certification is open to candidates who (1) graduate from an approved medical program (either through the Liaison Committee on Medical Education, American Osteopathic Association, or Educational Commission for Foreign Medical Graduates), (2) hold a valid license, (3) have three years of experience, (4) hold board certification in a medical specialty area, (5) complete 150 hours of management education and a graduate management degree (in areas including business, medical management, science, health administration, or public health), (6) have one year of medical management experience, and (7) provide a letter of recommendation confirming management experience. Referred to as diplomats.	"Eligibility" Certifying Commission in Medical Management, www.ccmm.org/eligibility/index.aspx (Accessed 3/2/15).	40–41
Certified Public Accountant (CPA)	A CPA is a financial advisor who has taken 150 semester hours of college coursework, passed the Uniform CPA Examination, and gained licensure from the state in which he or she practices.	"FAQs - Become a CPA" The American Institute of Certified Public Accountants, http://www.aicpa.org/BecomeACPA/FAQs/Pages/FAQs.aspx#cpa_answer2 (Accessed 3/26/15); "What Does It Take to Become a CPA?" The American Institute of Certified Public Accountants, retrieved from http://www.aicpa.org/BECOMEACPA/GETTINGSTARTED/Pages/default.aspx (Accessed 3/26/15).	36
Certified Valuation Analysts (CVA)	CVA certification is available to licensed CPAs or those who have both a business degree and "substantial experience" in business valuation (e.g., two or more years of full-time or equivalent experience in business valuation; or having performed 10 or more business valuations; or are able to demonstrate substantial knowledge of relevant theory, methodologies, and practices). All applicants must submit references and pass a comprehensive, five-hour, multiple-choice, proctored exam. In the alternative, they can attend an optional five-day training session if it is decided that they have a level of expertise deemed credible by NACVA.	"Qualification for the CVA: Certified Valuation Analyst Designation" National Association of Certified Valuation Analysts, www.nacva.com/certifications/C_cva.asp (Accessed 2/27/15).	38
Chartered Financial Analyst (CFA)	The CFA charter designates the knowledge and learned skills needed for investment analysis and decision-making in today's global financial industry. Requisites include an agreement to a code of ethics and standards of professional conduct, the successful completion of three levels of rigorous examinations, as well as four years of qualified investment work experience.	"Become a CFA Charterholder" Chartered Financial Analyst Institute, http://www.cfainstitute.org/programs/cfaprogram/charterholder/Pages/index.aspx (Accessed 2/27/15).	39
Fellow of the Healthcare Financial Management Association (FHFMA)	This certification is only available to those who have already received the CHFP designation and have (1) five years total as a regular or advanced HFMA member; (2) a bachelor's degree or 120 semester hours from an accredited college or university, (3) a reference from an FHFMA or current elected HFMA chapter officer, and (4) volunteer activity in healthcare finance within three years of applying for the FHFMA designation.	"Certification" Healthcare Financial Management Association, http://www.hfma.org/Content.aspx?id=508 (Accessed 3/2/15);	42

Key Concept	Definition	Citation	Concept Mentioned on Page #
Fellow, Academy for Healthcare Management (FAHM)	Advanced certification is gained through completion of the introductory course as well as completion of additional coursework in governance and regulation, health plan finance and risk management, network management, and medical management.	"Fellow, Academy for Healthcare Management" America's Health Insurance Plans, www.ahip.org/ciepd/options/fahm.html (Accessed 2/27/15).	44
Master Analyst in Financial Forensics (MAFF)	Credentialed through the Financial Forensics Institute, (a subsidiary of NACVA), MAFFs are specialists in one of five areas: Commercial Damages and Lost Profits; Matrimonial Litigation, Bankruptcy, Insolvency, and Restructuring; Business Valuation in Litigation; Business and Intellectual Property Damages; Forensic Accounting; and Fraud Risk Management. Applicants must possess a previous credential, varying levels of experience depending on specialization, one business and two professional references, and a passing grade on a four-hour, proctored exam.	"Qualifications for the MAFF - Master Analyst in Financial Forensics" National Association of Certified Valuation Analysts, www.nacva.com/certifications/C_maff.asp (Accessed 2/27/15).	39
Master Certified Business Appraiser (MCBA)	MCBA designation, recognized by Institute of Business Appraisers, is reserved for the most qualified and experienced CBAs. Requisites include that the applicant must have a current Certified Business Appraiser designation that has been held for not less than 10 years and must have 15 years of full-time experience as a business appraiser.	"CBA/MCBA Applicant's Handbook", June 2014, Institute of Business Appraisers, www.go-iba.org/files/CBA_MCBA_Applicants_Handbook_4-25-14_Final.pdf (Accessed 2/27/15).	38
Modalities of Consulting Activity	(1) continuity services, (2) annuity services, and (3) episodic services	"Organizational Change and Development," By Karl E. Weick and Robert E. Quinn, Annual Review of Psychology, Vol. 50 (1999), p. 367–82.	6
Professional, Academy for Healthcare Management (PAHM)	Certification is given by the AHM after completion of the course "Healthcare Management: An Introduction," which covers the basics of health insurance plans, healthcare providers, as well as operational, regulatory, legislative, and ethical issues.	"Professional, Academy for Healthcare Management" America's Health Insurance Plans, www.ahip.org/ciepd/options/pahm.html (Accessed 2/27/15).	44
Stages of the Engagement Process	(1) Suspect Stage; (2) Prospect Stage; (3) Target Stage; and (4) Client Stage	N/A	29–31
The Phases of a Consulting Engagement	(1) proposal, (2) research, (3) analysis, and (4) presentation	N/A	31–34
The Records Management and Archiving Process	(1) identification, (2) classification, (3) storage, and (4) retrieval	N/A	34
Three Types of Financial Statement Preparation	(1) financial statement compilation, (2) financial statement review, and (3) financial statement audit	"Proposed Statements on Standards for Accounting and Review Services," By AICPA Accounting and Review Services Committee, April 28, 2009, p. 17.	10–11
Types of Research	(1) specific and (2) general (as defined in Chapter 2, Benchmarking)	N/A	32

OVERVIEW

Rapidly changing regulations, reimbursement issues, competitive forces, and technological advancements have created opportunities for those seeking to provide consulting services to healthcare professional practices. Despite the 2009 economic downturn, the healthcare consulting industry earned approximately $10.8 billion in 2014, with revenues expected to grow 5.5 percent per year, on average, through 2019.[1]

As the healthcare industry has evolved during the past several decades, demand has increased for consulting services related to assisting healthcare professional practices in navigating complicated industry obstacles, such as reduced reimbursement for physician's professional services, increased competition, costs associated with technological advancements, as well as regulatory pitfalls. This increased need for healthcare consulting services has been met by professionals who have entered the consulting arena from a diverse array of previous experience and backgrounds, including, for example, accounting, finance and economics, insurance, law, health administration, medicine, nursing, academics, and public health.

Although healthcare consulting requires a large body of specialized knowledge, healthcare professional practices are also businesses and are subject to many of the same regulations and market forces as businesses in non-healthcare industries. (Although no longer the case, a well-known adage in the healthcare profession is that one should refrain from considering a professional practice as a *business*, or anything other than as a *learned profession*, at risk of offending the physician owner). As a result, similar consulting methods and, therefore, processes related to non-healthcare businesses are applicable to healthcare professional practices. This chapter will discuss various opportunities for healthcare consulting, as well as the general principles and processes that are useful in many consulting engagements.

CONSULTING ACTIVITIES

MODALITY OF CONSULTING ACTIVITY

Consulting services may be offered through several different modalities, i.e., on a continuous basis, annually, or episodically on a case-by-case basis. Typically, the nature and scope of the required service determines the modality of the consulting activity, e.g., management consultation often requires continuous monitoring and tax issue consultation typically requires attention only once a year. Healthcare consultants will also find an array of discrete engagements based on one-time needs of professional practice clients, for example, implementation of an electronic health records (EHRs) system or the valuation of a practice upon its dissolution. A description of the different areas and modalities in which consulting services may be offered is set forth in Table 1-1.

1 "IBISWorld Industry Report OD5496, Healthcare Consultants in the US" By Jocelyn Phillips, IBISWorld, Inc., September 2014, p. 3-4.

Table 1-1: Categorization of Healthcare Consulting Services

Areas of Consulting Services	Description	Type		Modality
Accounting and Tax Related Services	Similar to other non-healthcare professional practices, healthcare consultants assist their healthcare practice clients through financial statement auditing processes and tax filings.	Bookkeeping or Financial Accounting		Continuity
		Financial Statement Preparation, Auditing Services, or Assurance Services		Continuity
		Tax Services		Annuity
		Management or Cost Accounting		Continuity
Revenue Cycle Services	Assist healthcare professional practices in navigating reimbursement and regulatory parameters to properly code and charge for services rendered and then to obtain payment through the claims resolution and collections process.	Coding and Charting		Annuity or Episodic
		Billing and Claims Resolution		Continuity
		Reimbursement Yield Enhancement		Episodic
Regulatory Related Services	Assist healthcare professionals to avoid running afoul of strict regulatory restrictions, in addition to aiding in the acquisition and maintenance of accreditations, certifications, and licenses.	Corporate Compliance Audit		Episodic
		Risk Management		Episodic
		Accreditation, Certification, or Licensing	Provider Accreditation, Certification, or Licensing	Episodic
			Certification of Need	
Structure, Governance, and Organizational Structure Consulting	Assist in practice start-up activities, such as staffing and marketing, as well as the development of a practice mission to ensure staff buy-in.	Practice Start-Up Services		Episodic
		Organizational Development Services		Episodic
		Physician Compensation and Income Distribution		Episodic
Operational Management Consulting	Consultation on basic business and practice management, as well as implementation and management of healthcare information technology.	Supply-Side or Purchasing Consulting		Episodic
		Insurance Consulting		Episodic
		Practice Operational Management Services		Continuity
		Information Systems or Information Technology Services		Episodic
		Facilities Assessment		Episodic
		Operational Throughput		Episodic
		Turnaround or Management Restructuring Services		Episodic
Transition Planning	Provide expertise to clients regarding physician successorship, retirement planning, and valuation of a practice upon sale, liquidation, merger, and so forth.	Financial or Investment Planning and Retirement Services		Annuity or Episodic
		Successorship or Exit Planning		Episodic
		Valuation Services		Episodic
		Intermediary Services		Episodic

(continued)

Areas of Consulting Services	Description	Type	Modality
Strategic Planning and Business Development	Assist clients in strategic planning activities in an effort to maintain profitable business structures in the midst of constantly changing regulatory and reimbursement environments.	Marketing Analysis	Episodic
		Feasibility Analysis	Episodic
		Service Line Analysis	Episodic
Litigation Support	Use of consulting expertise to support legal counsel in their litigation engagements by providing healthcare consulting services or expert witness testimony.	Expert Witness	Episodic
		Nontestifying	Annuity or Episodic

Continuity Services

Consulting services that typically are provided on an ongoing basis are commonly referred to as *continuity services*. Many types of continuity services exist, including:

(1) Financial statement auditing services for both regular business services and compliance with specific healthcare related laws and regulations;
(2) Assistance with the practice's billing and claims resolution process;
(3) *Cost management advisory services* for healthcare professionals without substantial business experience; and
(4) Operational management services for healthcare professionals looking for more in-depth assistance in managing their practices.

> Examples of services provided on a continuing or annual basis: auditing services, coding and charting audits, financial planning and retirement services, management advisory services, practice management services, and tax services.

This type of consulting generally provides a source of recurring work and a stable stream of income for the healthcare consultant.

Annuity Services

In contrast to continuity services, healthcare consultants also may assist their professional practice clients on an annual basis by providing *annuity services*. Although annuity services may not provide the constant stream of work that continuity services do, annuity services still often represent a relatively regular income stream for a healthcare consulting practice, particularly when positive client rapport generates a long-term relationship between the healthcare consultant and the professional practice. Services that typically are provided on an annual basis include:

(1) Coding and charting audits and process review;
(2) Financial statement auditing;

(3) Tax filing services;
(4) Financial planning and retirement services both for the practice as a whole and for the healthcare professionals associated with the practice (note that these services are also often requested by clients to be provided on an episodic basis);
(5) Employee Stock Option Plan (ESOP) valuation Services for Financial Reporting; and
(6) Impairment testing of goodwill and other intangible assets.

Episodic Services

In addition to services provided on a continuing or annual basis, healthcare consulting services also may be provided on an *episodic*, or discrete, engagement basis. Each episodic project will have separate distinct deliverables and project timetables, and often they will have different engagement agreements detailing the terms of each project. Although episodic engagements may not provide the regular revenue stream that continuity and annuity services do, these engagements are extremely important to a healthcare consultant because they are often the means by which the consultant may build relationships with a particular client, thereby securing a valuable source of both future work and referrals, which may assist in expanding the consultant's client base. The following services typically are provided on an episodic basis:

(1) Providing corporate compliance and risk management audit services for a wide variety of legal and regulatory issues;
(2) Advising the practice on revenue cycle issues related to reimbursement yield enhancement;
(3) Assisting with the practice's accreditation, certification, and licensure;
(4) Implementing information systems or information technology projects or hardware or software upgrades;
(5) Providing practice start-up and organizational development services;
(6) Advising for physician compensation and income distribution services;
(7) Providing turnaround or management restructuring services;
(8) Providing transition planning services, for example, successorship planning, intermediary, and valuation services;
(9) Providing strategic planning services, e.g., marketing, feasibility, and service line analysis;
(10) Providing litigation support services; and
(11) Providing valuation consulting services related to the purchase price allocation for tax and/or financial reporting purposes resulting from the transfer of ownership interest in the physician professional practice.

Examples of services provided on an episodic basis: corporate compliance and risk management, technology implementation, organizational development, restructuring services, and valuation services.

CONSULTING PROFESSIONALS

Consulting professionals come from diverse educational and experiential backgrounds and offer unique knowledge, skills, abilities, and perspectives from their respective areas of expertise to

their professional practice clients. Although not an exhaustive list, healthcare consultants include professionals such as certified public accountants (CPAs), management consultants, transactional consultants, insurance professionals, legal consultants, investment professionals, computer technologists, coding professionals, and valuation professionals. Depending on a given professional's credentials and core competencies, various niche markets may exist within the larger healthcare consulting arena, which allow professionals with experience in other industry sectors to enter into healthcare-related consulting submarkets.

BUSINESS AND FINANCIAL CONSULTING SERVICES

> "Do your duty and then collect your money" is the physician's motto. "Be sure of your money before you deliver the goods" is the perfectly proper motto of the business man.
>
> ***John B. Roberts, 1908***

As previously mentioned, healthcare consultants provide a wide variety of business-related consulting services to healthcare professional practices. Understanding the basic principles related to business and financial consulting in the healthcare sector is an important step in order to successfully enter this subfield of the consulting market, as steady growth in business advisory services is expected to correlate with improving economic conditions, continued M&A activity, and reinvestment in information technology.[2]

ACCOUNTING AND TAX RELATED SERVICES

Financial Statement Preparation and Auditing Services

There are three types of financial statement preparation that may be applicable to a professional practice:

(1) *Financial statement compilation* - sets forth financial performance and economic status information in a format that can be easily reviewed by stakeholders. However, a financial statement compilation contains only the representation of the practice's management (i.e., owners), without undertaking to express any assurances on the accuracy or veracity of the financial statements.[3]

(2) *Financial statement review* - which expresses, with limited assurances, that there are no material modifications that should be made to the financial statements in order for the statements to be in conformity with standard accounting practices, such as GAAP.[4]

(3) *Financial statement audit*—which expresses the opinion of the consultant of the fairness with which the practice presents, in all material respects, its: (1) financial position;

2 "IBISWorld Industry Report 54161, Management Consulting in the US" By Jeremy Edwards, IBISWorld, Inc., June 2014, p. 9-11.
3 "Compilation and Review of Financial Statements" The American Institute of Certified Public Accountants, December 1978, http://www.aicpa.org/download/members/div/auditstd/AR-00100.PDF (Accessed 03/18/10), p. 1409.
4 "Compilation and Review of Financial Statements" The American Institute of Certified Public Accountants, December 1978, http://www.aicpa.org/download/members/div/auditstd/AR-00100.PDF (Accessed 03/18/10), p. 1410.

(2) results of operations; and (3) cash flows in conformity with standard accounting practices, such as GAAP.[5]

Compilation of unaudited financial statements is defined under the Statements on Standards for Accounting Review Services Section 60.05 as:

> "…a service, the objective of which is to assist management in presenting financial information in the form of financial statements without undertaking to obtain or provide any assurance that there are no material modifications that should be made to the financial statements in order for the statements to be in conformity with the applicable financial reporting framework. Although a compilation is not an assurance engagement, it is an attest engagement."[6]

Financial statement review services typically include, *"… through the performance of inquiry and analytical procedures, a reasonable basis for expressing limited assurance that there are no material modifications that should be made to the financial statements in order for the statements to be in conformity with generally accepted accounting principles"*[7] [Emphasis added].

While most non-healthcare professional practices do not audit their financial statements, healthcare professional practices and enterprises may be required to comply with more stringent financial and accounting auditing requirements than other non-healthcare businesses. Auditing of the financial statements of healthcare enterprises is often necessary to ensure compliance with federal, state, and local regulations, as well as to assist the professional practice in its consideration of future financial and management decisions. Healthcare professional practices may also desire independent audits of their corporate compliance or risk management programs, or a review of the auditing work of a previous advisor.

Tax Services

Consulting opportunities exist for providing tax-related services to healthcare professional practices and other related enterprises. Healthcare professional practices may require a consultant for such services as: (1) the preparation of state and federal tax forms and filings; (2) year-end tax projections; and (3) audit support services. Additionally, nonprofit healthcare enterprises may seek the assistance of a consultant in fulfilling additional federal, state, and local financial reporting standards. Further, organization of healthcare professional practices may vary significantly with each structure having its own unique tax implications, providing opportunities for tax consulting services when these diverse legal organizations merge, set up joint ventures, strategic alliances, or create other cooperative arrangements.[8]

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5 "Responsibilities and Functions of the Independent Auditor" The American Institute of Certified Public Accountants, November 1972, https://www.aicpa.org/download/members/div/auditstd/AU-00110.PDF (Accessed 3/18/10), p. 41.

6 "Statements on Standards for Accounting and Review Services" Section AR §60.05 (June 2014), http://www.aicpa.org/Research/Standards/CompilationReview/DownloadableDocuments/AR-00060.pdf (Accessed 3/4/15), p. 1625.

7 "Compilation and Review of Financial Statements" The American Institute of Certified Public Accountants, December 1978, http://www.aicpa.org/download/members/div/auditstd/AR-00100.PDF (Accessed 03/18/10), p. 1423.

8 "Tax Services" Healthcare Management Consultants, http://www.healthcaremgmt.comt/tax.html (Accessed 7/28/09).

Management or Cost Accounting

With the advent of healthcare reform, cost management is becoming an increasingly important consideration for many professional practices. Implementation of a cost accounting system that enables management to properly track, review, and understand the costs associated with the operation of the practice at the diagnostic or treatment procedure level can often assist administrators with: (1) negotiating with payors who reimburse on a case basis; (2) planning service expansions more strategically; (3) improving the processes for monitoring physician efficiency by providing data on individual treatment protocols; and (4) securing quality- and cost-based reimbursement enhancements.[9] Various ways of conceptualizing cost exist (e.g., direct variable costs, direct fixed costs, indirect overhead costs, and so forth), and healthcare consultants, particularly those with accounting experience, may be able to assist in the implementation of an appropriate cost accounting systems and, in the utilization of the selected system, to identify cost-saving and/or quality enhancing opportunities. Through improved understanding of the various elements comprising a practice's cost structure, a healthcare professional practice is better equipped to implement an effective management accounting system which considers both financial and operational information in order to more effectively focus the practice on achieving specified objectives.[10]

Relevance of this Guide

Although auditing, tax, management, and cost accounting services primarily rest upon the consultant's accounting knowledge, skills, and abilities, a basic knowledge of the healthcare industry as a whole can be an important component in the provision of these services by allowing the consultant to maintain a contextual understanding of the subject enterprise, the sources of the data and information provided, and an insight into how the data is being generated. Chapter 3: *Regulatory Environment* in *An Era of Reform—The Four Pillars* addresses tax law as well as audits of corporate compliance and risk management programs. Additionally, Chapter 2: *Reimbursement Environment* in *An Era of Reform—The Four Pillars* may be a useful reference for management or cost accounting services because it details a professional practice's revenue cycle and breaks down reimbursement and policy implications by payor.

REVENUE CYCLE SERVICES

Optimization of the revenue cycle is important to the success of any healthcare professional practice, whether a solo-practitioner practice, a group practice, or a hospital-based practice. The revenue cycle has many elements that should be understood thoroughly (both as discrete elements as well as in the aggregate) in order to avoid a potential reduction in revenue. Healthcare professionals, who may be too focused on a single part of the revenue cycle, may be well served by a consultant who may provide assistance through a more comprehensive understanding of the entire revenue cycle.

9 "Issues in Cost Accounting for Health Care Organizations" By Steven A. Finkler, Gaithersburg, MD: Aspen Publishers, Inc. (1994), p. 6-7.
10 "Management Accounting" By Anthony A. Atkinson et al., 4th ed., Upper Saddle River, NJ: Pearson Prentice Hall, 2004, p. 3.

The components of the revenue cycle include, but are not limited to the following:

(1) coding and charting procedures;
(2) charge capture;
(3) reimbursement policies;
(4) billing procedures; and
(5) claim resolution methods.

By developing an understanding of the specifics of the revenue cycle the better prepared the consultant will be to assist their clients.

Coding and Charting

The first step in the healthcare revenue cycle is with the charting of the diagnostic and treatment services provided to each patient by the physician. This process involves converting this information to a system of codes that are utilized in billing payors and patients at a predetermined contractual rate. Significant unrealized revenue can exist when patient services are being improperly charted or coded. Accordingly, consulting opportunities exist related to reviewing *coding* policies and *charting* guidelines to ensure that practitioners are being reimbursed the full and correct payment amount for the services they provide. Additionally, as further described in *Corporate Compliance* and *Risk Management Services*, healthcare consultants may conduct audits of past medical records to ensure that sufficient documentation supporting the coded amounts exists (for example, ensuring that "bundled" procedure codes are not reported individually) and that no over- or under-payments are being made to the practice.[11]

Reimbursement Yield Enhancement

Effective charge capture and payment collection involves not only proper coding procedures, but also an understanding of how different payors reimburse providers. Chargemaster consulting is a process by which a consultant can assist a healthcare professional practice client by ensuring their code lists are up-to-date and are being properly utilized. By analyzing the *charge description master (CDM)*, or a professional practice's charging mechanism, a healthcare consultant can assist practice administrators in identifying services for which the practice receives less reimbursement than the procedure cost to deliver, as well as assisting the practice in revising its CDM to appropriately recover all costs associated with each service, thereby maximizing cash flow to the practice.[12]

Additionally, consultants can aid their healthcare professional practice clients by effectively communicating the intricacies of different payor reimbursement models and demystifying the payment rates available under these alternative models, which may allow the clients to enhance their reimbursement yield through optimization of their fee structures by employing up-to-date reimbursement rates and methods.[13]

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11 "Dermatology Coding Services" DermResources, http://www.dermresources.com/coding.html (Accessed 07/28/09).
12 "Charge Master Consulting" T.T. Mitchell Consulting, Inc., http://www.ttmitchellconsulting.com/chargemaster.html (Accessed 01/08/10).
13 "Financial Management of the Medical Practice" By Max Reiboldt, 2nd ed., American Medical Association, 2002, p. 17-18.

Billing and Claims Resolution

Proper submission of claims to payors is an integral step in the revenue cycle, which may the deciding factor in whether a practice receives reimbursement for the medical services rendered to the patient. Claim submission is governed by individual payor requirements, which vary substantially among payors and, which, if not assiduously conformed to, have the potential to present numerous opportunities for claim denial. Many times, claim denial can be traced back to errors committed by the practice, such as failure to verify insurance coverage prior to service, failure of the primary care physician to send a referral to the payor, failure to verify coverage for particular services, failure to use updated and proper coding and charting procedures, and/or errors in charge capture or charge entry.[14] Understanding payor reimbursement guidelines (such as Medicare's *National Coverage Determinations*) is the primary means by which physician enterprises can avoid claim denial. Consultants can assist healthcare professionals by explaining the different reimbursement policies used by Medicare, Medicaid, and the various private and commercial payors, differentiating between claims decisions made by the primary payor and those made by local intermediaries, each of which use their own medical review policies.[15]

In the event that a denied claim is appealable, healthcare consultants can assist professional practices by being well versed in the payor claims denial appeals processes, the potential pitfalls, and effective strategies for obtaining a favorable outcome from the process.[16] Additionally, a consultant can perform an analysis of the grounds given for payor denial of a claim and suggest methods of re-engineering the practice's revenue cycle to avoid future denials.[17]

Relevance of this Guide

As previously mentioned, Chapter 2 and Chapter 3 of *An Era of Reform—The Four Pillars* provide an overview of reimbursement and regulatory considerations of which healthcare consultants should generally be aware in order to effectively advise their professional practice clients on matters related to the revenue cycle, such as proper charting and coding requirements and regulations regarding the bundling of procedure codes. Because reimbursement schemes and regulatory structures are constantly changing, healthcare consultants should keep abreast of the pronouncements from various federal, state, and local governing bodies, namely the Centers for Medicare and Medicaid Services (CMS), i.e., Medicare and Medicaid, as well as the commercial and private payors. For example, consultants assisting healthcare professional practices in their billings and claims resolution processes may wish to review the most recent payor guidelines, e.g., Medicare's National Coverage Determinations.

14 "The Physician Billing Process: Avoiding Potholes in the Road to Getting Paid" By Deborah L. Walker, Sara M. Larch, and Elizabeth W. Woodcock, Englewood, CO: Medical Group Management Association, 2004, p. 114.
15 Ibid, p. 118.
16 Ibid, p. 118.
17 Ibid, p. 120.

REGULATORY RELATED SERVICES

Corporate Compliance or Risk Management Services

Healthcare providers are under constant scrutiny from regulatory agencies at the local, state, and federal levels, as well as from private organizations such as insurers, payors, and investment groups. Improperly maintained and managed policies and procedures can lead to significant fines, revocation or suspension of licenses or certifications, mandatory reporting, exclusion from state and federal reimbursement programs, and potential civil and criminal penalties. Accordingly, a healthcare provider's *corporate compliance program* requires continuous monitoring and updating. Healthcare consultants may assist professional practices with this task by providing *risk assessments* and, in turn, developing and implementing a compliance program, which may include staff training programs, policy and procedure manuals, and auditing support.[18]

Accreditation or Certification Consulting

The healthcare industry is laden with complicated accreditation, certification, and licensing requirements for healthcare professional practices. A provider's failure to meet certain of these requirements may result in the practice facing certain restrictions regarding the provision of patient services, for example, if required by the particular state in which a healthcare practice operates, a provider may be restricted from operating a computed tomography scanner in his or her office without first obtaining a Certificate of Need (see Chapter 3: *Regulatory Environment* in *An Era of Reform—The Four Pillars*). Additionally, certain payors may refuse to reimburse providers who are not certified or accredited. Healthcare consultants can assist in this arena by understanding how state certification and licensing requirements, as well as other accreditation requirements, may affect their healthcare professional clients and assist them in appropriately meeting these requirements.

Relevance of this Guide

Chapter 3: *Regulatory Environment* in *An Era of Reform—The Four Pillars* gives a brief overview of federal and state laws and regulations related to corporate compliance, as well as of licensing and accreditation requirements. Chapters 7, 8, 9, and 10 of *Consulting Services* provide more details related to the licensing standards for physician professionals, allied health professionals, mid-level providers, and technicians and paraprofessionals, respectively, while chapters 3, 5, and 6 in *Consulting Services* discuss the implications of laws applicable to each of the various business structures that healthcare professional practices may choose to employ. However, it also may be useful to consult additional sources of information, such as state licensing and certification standards, up-to-date news and literature, and existing and proposed actions of relevant federal and state authoritative agencies.

18 "Healthcare Management Corporate Compliance" The Rehmann Group, 2009, http://www.rehmann.com/pdfs/SellSheets/hc_compliance.pdf (Accessed 5/27/10).

STRUCTURE AND GOVERNANCE CONSULTING

Practice Start-Up Services

Healthcare providers are not required to have any educational background in business or management. Numerous opportunities, therefore, exist for consulting professionals to assist healthcare professionals with practice start-up services. Such opportunities include: (1) advising the professional practice client on matters related to obtaining insurance; (2) selecting, setting up, staffing, and maintaining an office; (3) marketing the practice to the public and other professionals; (4) complying with local, state, and federal regulations; and (5) developing procedures for day-to-day operational management and accounting practices, among many other issues. Further, should two or more providers seek to integrate their practices into an independent practice association or another type of integrated provider entity, healthcare consultants may provide market research and analysis to determine if the integration would adversely affect competition in a particular service area (i.e., raise antitrust concerns) and work with each practice's legal counsel to structure the integration in an equitable and legally permissible manner.

Organizational Development Services

Organizational development in the healthcare professional practice setting often involves assisting a professional practice in developing an organizational mission and vision, ensuring the staff's acceptance of these principles, and structuring each segment of the professional practice to fit within the principles upheld by the practice mission and vision.[19] This type of consulting typically requires identification of core competencies of the organization and alignment of the practice's business strategy to complement them.[20]

Physician Compensation and Income Distribution

Development of physician compensation and income distribution plans involves identification of the appropriate methods by which to compensate the practice's physicians for their professional services based on practice revenues and expenses. As discussed in depth in Chapter 3: *Compensation and Income Distribution*, physician compensation plans may:

(1) Contribute to the incentive and performance feedback system;
(2) Assist in driving performance to achieve goals; and
(3) Facilitate more effective identification and communication of an organization's values, dynamic, productivity objectives, and performance expectations.[21]

19 "Organizational Development: An Overview" Organizational Development Consulting & Training, http://www.orgdct.com/overview.htm (Accessed 11/25/09).
20 "Total Performance Organization Development" Organization Development Consultants, Inc., 2009, http://www.od-consultants.com/hpod.htm (Accessed 11/25/09).
21 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth M. Hekman, New York, NY: McGraw-Hill, 2000, p.156-157; "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, New York, NY: Medical Group Management Association, 2006, p. 9-10.

Several *internal indicators*, or practice characteristics, are suggestive of the success (or failure) of an existing compensation plan, such as: (1) practitioner perceptions, (2) practice productivity, (3) financial standing of the enterprise, and (4) the current level of compensation in comparison to similar enterprises.[22] While the mechanical details of the compensation development process may vary due to the diverse array of practice types and provider arrangements, the role of the healthcare consultant may be to assist the practice with an evaluation of the existing compensation system, provide financial modeling of alternative plans, and to participate in the proposal of alternative plans to the practice's physicians.

Relevance of this Guide

Several chapters contained in this *Guide* may be particularly useful for a healthcare consultant providing advisory services related to business structure and governance, including:

- Chapter 2 of *An Era of Reform—The Four Pillars*, which discusses reimbursement and the healthcare revenue cycle;
- Chapter 3 of *An Era of Reform—The Four Pillars*, which highlights legal issues relevant to the healthcare professional practice;
- Chapter 4 of *An Era of Reform—The Four Pillars*, which discusses the competitive trends in healthcare as they may affect decisions related to changes in business structure and governance;
- Chapter 5 of *An Era of Reform—The Four Pillars*, which discusses developments in clinical technology as well as practice management technology;
- Chapter 5 of *Consulting Services*, which describes the basic structure of the professional practice;
- Chapter 6 of *Consulting Services*, which outlines the characteristics of integrated provider groups and other emerging trends;
- Chapters 7 through 10 of *Consulting Services*, as they relate to the type or types of professionals that characterize the subject practice;
- Chapter 3 of *Consulting Services*, which describes compensation and benefits issues related to healthcare professionals; and
- Chapter 4 of *Consulting Services*, which more thoroughly outlines the valuation process of provider compensation agreements, particularly as they are regulated by state and federal fraud and abuse laws.

OPERATIONAL MANAGEMENT CONSULTING

Practice Management Services

Practice management consulting involves a breakdown of the day-to-day operation of the healthcare professional practice and analysis of the existing processes in order to identify areas in need of improvement. This type of consulting service is fairly broad in nature and may be related to the other consulting topics discussed in this chapter, e.g., coding and charting, auditing,

22 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, New York, NY: Medical Group Management Association, 2006, p. 10.

corporate compliance, information systems and information technology, tax and accounting services, and organizational development, among others.

Information Systems and Information Technology Services

As of June 2014, information technology (IT) strategy represented 20.2 percent of the management consulting industry.[23] This subsector is ideal for consultants with experience in information systems, especially those specific to the healthcare industry.

Numerous advances in healthcare information technology have been made in recent years allowing healthcare practices to reduce errors, streamline the healthcare delivery process, and reduce associated costs.[24] In addition, legislation incentivizing practitioners to move toward the use of advanced technology such as EHRs has also been enacted, including the 2009 HITECH act, which assists physician practices in financing EHR systems through incentive payments, provided the physician practice can prove *meaningful use* of an approved EHR system.[25] Privacy regulations, such as those found in the Health Insurance Portability and Accountability Act of 1996 and the Red Flags Rule, also regulate the secure storage and transmission of private health-related or other identifying data, which may require special equipment and programming or reprogramming of old equipment to comply with these regulations.

Consultants can provide an array of services in this arena, including the implementation of information security systems; installation and configuration of medical enterprise resource planning systems; assistance in the transition to EHRs, telemedicine and e-prescribing; assisting with maintenance of the organization's data network; and development of a website or other advanced marketing tools.[26]

Facilities Assessment

Numerous factors may arise when planning the construction of a new facility or the expansion of an existing facility, which require knowledge of general business and architectural concepts as well as knowledge of the overall healthcare industry and healthcare-specific design considerations. First, it is necessary to understand the patient market to insure that the proposed facility can make the necessary adjustments to properly accommodate the needs of the patient population. Second, the facility should be assessed with regard to location, the use of space within the facility, and the physical condition of the structure itself. Other important factors to consider in this facilities assessment analysis include: (1) the visibility and accessibility of the facility; (2) zoning restrictions which may limit the ability to expand; (3) the impact of the location on the practice's ability to grow; (4) how easily traffic moves through the interior space of the facility; (5) the proximity of facility entrances to patient parking areas; (6) the positioning of furniture and equipment to make the most efficient use of the space; (7) occupancy costs of

23 "IBISWorld Industry Report 54161, Management Consulting in the US" By Jeremy Edwards, IBISWorld, Inc., June 2014, p. 14.
24 See Chapter 5: *Technological Development* in *An Era of Reform—The Four Pillars* for further discussion regarding the implementation of EHRs.
25 "American Recovery and Reinvestment Act of 2009" Pub. L. No. 111-5, § 13001, 123 Stat. 115, 226 (February 17, 2009).
26 "iMBA Healthcare Information Technology" Medical Business Advisors, Inc., 2009, http://www.medicalbusinessadvisors.com/services-information.asp (Accessed 11/03/09).

the facility; (8) facility security; and (9) whether the appearance of the facility projects an image that indicates a high quality of care.[27]

Operational Throughput

The number of patients passing through a healthcare professional practice is often crucial to the financial viability of the practice. Often healthcare professional practices do not efficiently manage patient throughput, resulting in a reduction in practice revenue. Healthcare consultants can provide valuable assistance to healthcare practices by assessing a facility's existing throughput with an analysis of patient flow, patient safety, customer (patient) satisfaction, staffing ratios, triage practices, exam room capacity vis-à-vis utilization, and so forth.[28] Healthcare consultants with a background in clinical practice or operations management may be particularly adept at assisting clients in optimizing operational throughput due to their understanding of how the various factors previously indicated are likely to affect patient flow through the practice.

Insurance Consulting

Numerous legal liability pitfalls exist within a healthcare professional practice. As with other non-healthcare businesses, healthcare professional practices typically maintain insurance against loss of property due to fire, theft, or other similar occurrence, as well as insurance to cover loss of income due to a key person's disability caused by sickness or accident.[29] Also, similar to other businesses, healthcare professional practices typically obtain premises liability insurance, some sort of employee health insurance plan, and possibly employee fidelity bonds.[30] Perhaps the most important insurance issue for healthcare providers, however, is maintaining professional liability, or medical malpractice, insurance, the cost of which varies from provider to provider depending on factors specific to the physician, such as age, specialty, and the provider's history of malpractice claims. Professional liability insurance is often a significant expense for a healthcare enterprise.[31]

Healthcare consultants, particularly those with experience in the insurance industry, may provide invaluable services by assisting physicians and other healthcare providers in understanding how to protect themselves from both professional liability and financial losses to their professional practice. As many types of insurance, particularly professional liability or malpractice insurance, can be costly, the healthcare consultant can also help the healthcare professional develop an insurance coverage scheme best tailored to the physician or practice's specialty, the services provided, location, and potential for liability.[32] Healthcare consultants can also provide assistance to a professional practice by assessing the adequacy of the professional practices current medical malpractice insurance coverage and reviewing options for additional or alternative coverage. Further, as insurance providers change their policies to reflect changes in laws governing

27 "Developing Ambulatory Healthcare Facilities: For Medical Groups, Hospitals, and Integrated Delivery Systems: A Practical Guidebook" Madison, WI: Marshall Erdman and Associates, Inc., January 1996, p. 67.
28 "Emergency Department Throughput Evaluation" Quorum Health Resources, http://www.qhr.com/consulting/clinical_operations/emergency_department_throughput_evaluation/ (Accessed 1/14/10).
29 "The Business Side of Medical Practice" Milwaukee, WI: American Medical Association, 1989, p. 45.
30 Ibid, p. 48-52.
31 Ibid, p. 46-47.
32 Ibid, p. 47.

malpractice claim awards, healthcare professional practices may seek the services of a consultant to assist them in keeping abreast of changing policies and emerging trends which may be applicable to the healthcare provider and their professional liability insurance coverage.

Turnaround or Management Restructuring Services

In the evolving regulatory, reimbursement, competitive, and technology environments, as well as in the ever-changing economic climate, many healthcare professional practices may find it difficult to maintain historical profit levels due to the maintenance cost of excessive debt, both personally (e.g., education loans) and professionally (e.g., due to decreased reimbursement, the increasing complexity of the regulatory environment, and changes to the practice patient base). Healthcare consultants may assist professional practices by providing services such as a billing process assessment, collections evaluation, fee schedule review, benchmarking analysis of office efficiency, and proposals for reducing office expenditures and employee overhead expenses, among many others services.

Relevance of this Guide

Because many areas of the professional practice business are being scrutinized for inefficiencies and possible improvements, the following chapters in this *Guide* should prove useful to a healthcare consultant who is identifying potential areas of concern, as well as developing resolutions to address these concerns:

- Chapter 2 of *An Era of Reform—The Four Pillars*
- Chapter 3 of *An Era of Reform—The Four Pillars*
- Chapter 4 of *An Era of Reform—The Four Pillars*
- Chapter 5 of *An Era of Reform—The Four Pillars*
- Chapter 6 of *Consulting Services*
- Chapter 7 of *Consulting Services*

TRANSITION PLANNING SERVICES

Financial Planning and Retirement Services

Healthcare professional practices deal with many of the same financial and retirement planning issues as other businesses. As with other non-healthcare enterprises, care must be taken to ensure retirement planning complies with the provisions of the *Employee Retirement and Income Security Act*. Consulting opportunities exist for healthcare consultants to:

- Review or design financial and retirement plans for owners and employees of a healthcare enterprise;
- Work with a professional practice concerning the adoption or alternation of financial and retirement plans;
- Preparation of tax filings in relation to these financial and retirement plans;
- Projection of contributions midyear;

- Conducting allocations or accountings for these financial and retirement plans;
- Coordination of *qualified domestic relations orders*;
- Maintenance of disbursements or loans from retirement plans;
- Insuring compliance with fiduciary requirements under applicable regulations related to these financial and retirement planes;
- Generation 401(k) safe harbor notices and Internal Revenue Service or Notice of Change to Director's Rules letters; and
- Generation of summary annual reports related to these financial and retirement plans.[33]

Successorship Planning Services

A substantial portion (over 43 percent) of the physician workforce is over the age of fifty-five, indicating a reasonable likelihood that a large number of physicians will be exiting the profession within the next decade.[34] Coupled with the fact that physician perspectives on work-life balance have shifted in recent years, leading to different workload expectations, this data emphasizes the importance of strong succession plans so insure the practice's continuity after the departure of one of its physicians.[35] Healthcare consultants may advise the practice on issues related to physician retirement and the resulting effect on the practice's operating expenses and revenue, as well as how the shareholder, partnership, or employment agreement should be restructured to accommodate a physician who is contemplating only partial retirement.[36] More generally, a succession plan may seek the services of an advisor regarding restructuring the practice, including adjustments to the practice's income distribution plan, provider on-call responsibilities, and employee recruitment activities.

In the case of a solo practitioner, a successorship plan is vital to insure the continuity of medical services to the solo practitioner's patients. In this circumstance, the healthcare consultant may assist the practice in performing market research necessary to locate an interested buyer or to identify target practices that may be interested in a merger.[37]

Valuation Services

Events such as purchases, sales, liquidations, dissolutions, and the settling of claims of a healthcare professional practice are governed by federal, state, and local regulations requiring that transactions involving assets comprising a healthcare enterprise be valued under the valuation premise of value of fair market value and that the transaction overcome the separate, but related, threshold of commercial reasonableness. The requirement of an appropriate practice *valuation* in these situations provides opportunities for healthcare consultants with backgrounds in finance, accounting, appraisal, or even general business. These opportunities include assignments for practice valuation, identification of potential buyers based on market research, negotiation of transaction terms, collaboration with legal counsel to prepare documents related to

33 "Retirement Plan Administration" Healthcare Management Consultants, http://www.healthcaremgmt.com/rpa.html (Accessed 5/27/10).
34 "Physician Characteristics and Distribution in the US" By Derrick R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 9.
35 "Succession Planning and the Physician Practice: Is Your Practice Prepared?" By Jon-David Deeson, The Journal of Medical Practice Management, Vol. 22, No. 6 (May/June 2007), p. 323-324.
36 Ibid.
37 "Taking Down Your Shingle: Developing and Implementing an Exit Strategy" By Vasilios J. Kalogredis and Neil H. Baum, The Journal of Medical Practice Management, Vol. 22, No. 6 (May/June 2007), p. 359.

the transaction, completion of a due diligence overview, and provision of assistance with financing arrangements, among other things. Knowledge of the healthcare industry is critical to an appropriate valuation of such transactions, because the value of a healthcare enterprise depends on several factors exclusive to the healthcare industry, and healthcare consultants who understand these factors may be well positioned to capitalize on these opportunities.

Intermediary Services

Due to the ever-evolving competitive, regulatory, reimbursement, and technological environments in which healthcare professional practices operate, many enterprises are forced to examine the manner in which they deliver their services in a continuous search for more efficient and cost effective methods of treating patients. For many professional practices, consolidation, merger, strategic alliance, and, in some cases, timely divestiture can be the keys to survival. In such cases, the healthcare consultant can provide valuable services acting as an intermediary between the client and its legal and financial advisors by: (1) conducting market research and feasibility analyses; (2) developing potential strategies for the future of the client practice; (3) structuring governance and operation of newly created enterprises; and (4) presenting new potential ownership strategies.

Relevance of this Guide

For the purpose of providing transition planning services to healthcare professional practices, it will be useful to have a general understanding of the unique characteristics attributable to the subject practice (Chapter 7 of *Consulting Services*), in addition to having knowledge of how the competitive marketplace (Chapter 4 of *An Era of Reform—The Four Pillars*), reimbursement and regulatory environments (Chapters 2 and 3 of *An Era of Reform—The Four Pillars*), and technological developments (Chapter 5 of *An Era of Reform—The Four Pillars*) affect a practice. Understanding how to appropriately structure both the practice itself (Chapters 5 and 6 of *Consulting Services*) and physician compensation plans (Chapter 3 of *Consulting Services*) will be necessary whenever a physician decides to reduce his or her workload or retire. Finally, Chapter 4 of *Consulting Services* will be a useful tool for understanding how to value a healthcare professional practice.

STRATEGIC PLANNING AND BUSINESS DEVELOPMENT

Marketing Analysis

The marketing of healthcare services is distinct from marketing in other industries because often the purchaser of healthcare services is not the actual consumer, i.e., third-party payors typically pay for services rendered to patients, who are responsible for only a portion of the cost of the services provided. As such, patients are attracted to healthcare professional practices based on motivations other than cost, e.g., non-financial amenities, such as perceived quality of care, convenience, and reputation. Further, under many employer-based insurance programs, physicians are chosen in conjunction with an insurance plan due to the restrictions on physician access inherent in most managed care plans. Therefore, marketing activity may be aimed

primarily at the employer and, only subsequently, directly to the patient.[38] Healthcare consultants with a background in business and marketing, coupled with an understanding of the healthcare marketplace, can assist healthcare professionals in creating a marketing scheme, which, if aimed at the appropriate audience, should enhance the practice's revenue-generating capabilities.

Feasibility Analysis

A feasibility analysis is useful when determining the value impact to the physician practice of a strategic initiative, such as whether to invest the physician's capital to open a new practice, develop a new service line, or expand an existing practice, service line, or facility. Healthcare consultants can provide the invaluable market research required for an accurate and comprehensive feasibility study. Further, consulting professionals with the appropriate experience may actually develop the feasibility analysis by studying the (proposed) capital investment project, assessing the competitive marketplace for the enterprise, analyzing the data, and developing a report for the client's consideration.

Service Line Analysis

The healthcare industry is strongly influenced by market forces (i.e., the four pillars: reimbursement, regulatory, competition, and technology), which can be used to evaluate the future profitability and financial success of the service line(s) which comprise a physician practice. The consultant, by compiling existing and projected industry data (using the four pillars framework) can separately assess the service line(s) provided by a healthcare practice and compile data that demonstrates industry-wide and regional trends specific to those service line(s). In reviewing these trends, the consultant and client can analyze the scope, supply and demand, provider demographics, reimbursement and regulatory environments, and market competition relevant to each service line in order determine the resulting effect of these forces on the projection of the financial performance and economic condition of the relevant subject service line and the resulting impact on the enterprise as a whole.

Relevance of this Guide

An understanding of the healthcare competitive marketplace is a significant requirement for providing services in strategic planning and business development.[39] Typically, the success of a healthcare professional practice's marketing efforts will heavily depend on having an accurate and complete understanding of the practice's "products" or services, which are discussed in Chapters 6 through 10 of *Consulting Services*. Further, Chapter 2: *Benchmarking* in *Consulting Services* discusses the different modes of benchmarking, which can be a useful research tool for consulting professionals who wish to conduct market research for a feasibility analysis. Finally, in order to properly evaluate a particular service line, a healthcare consultant should have a working understanding of the driving forces of the healthcare industry, with particular attention paid to the four pillars, discussed in Chapters 2 through 5 of *An Era of Reform—The Four Pillars*.

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38 "Healthcare Marketing in Transition: Practical Answers to Pressing Questions" By Terrence J. Rynne, Chicago, IL: Irwin Professional Publishing, 1995, p. xi.

39 See Chapter 4 of *An Era of Reform—The Four Pillars* for more on the healthcare competitive marketplace.

LITIGATION SUPPORT SERVICES

Healthcare consultants may utilize many of the previously described consulting services when providing litigation support services. In this role, the healthcare consultant may solely provide advisory services to assist the healthcare enterprise's legal counsel throughout the litigation engagement with the preparation of opposing expert deposition and trial questions. Additionally, the healthcare consultant may be engaged to provide expert witness testimony services during the deposition and trial. The expertise of the consultant will typically determine the scope of his or her expert opinion and may include such topics as the value of a practice, industry standards of care and corporate compliance, typical revenue cycle procedures and billing practices, and so forth.

A consultant must meet various thresholds to qualify as an expert witness in a court of law, which thresholds are based upon both Federal Rule of Evidence 702 and the United States Supreme Court opinions rendered in the *William Daubert v. Merrell Dow Pharmaceuticals, Inc.* and *Kumho Tire Company et al. v. Patrick Carmichael*, et al. cases.[40] Federal Rule of Evidence 702 states:

> "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case."[41]

To determine whether expert testimony is the "product of reliable principles and methods" and, therefore, admissible, the *Daubert* court determined that courts must verify whether the theory or technique:

(1) Can be and has been tested;
(2) Has been subjected to peer review or publication;
(3) Has:
    (a) A known or potential rate of error; and,
    (b) Standards controlling the technique's operation; and
(4) Enjoys general acceptance within a relevant scientific community.[42]

Six years later, the Supreme Court clearly decided in the *Kumho Tire* case that *Daubert* was to be applied to nonscientific testimony as well. However, given that the gatekeeping obligation in *Daubert*, as it relates to nonscientific testimony situations, may never "fit" the enumerated factors, the *Kumho Tire* decision encouraged judges to be "flexible" when determining admissibility.[43]

40 "William Daubert et al. v. Merrell Dow Pharmaceuticals, Inc." 509 U.S. 579, 581 (SCOTUS, 1993); "Kumho Tire Company, Ltd., et al., v. Patrick Carmichael, et al." 526 U.S. 137, 138-139 (SCOTUS, 1999).
41 "Testimony By Experts" Federal Rule of Evidence 702 (December 1, 2006).
42 "William Daubert v. Merrell Dow Pharmaceuticals, Inc." 509 U.S. 579, 592-594 (1993).
43 "Kumho Tire Company, Ltd., et al., v. Patrick Carmichael, et al." 526 U.S. 137, 141 (1999).

Although most state courts typically follow the Federal Rule of Evidence 702 related to expert witness testimony, some states have imposed additional requirements, for example, restrictions on expert testimony in medical malpractice cases, prohibiting expert testimony by physicians who dedicate too much of their time to testifying as experts in personal injury cases.[44]

ACO Related Services

The advent of healthcare reform initiatives has re-focused the healthcare delivery system in the United States on achieving the twin objectives of meeting higher quality standards and reducing healthcare expenditures. One method being employed to achieve these objectives are Accountable Care Organizations (ACO). The shift among healthcare providers to the ACO delivery model has opened new opportunities for the healthcare consultant, as well. Much like more traditional healthcare delivery systems, ACOs will require a wide array of expertise to assist in the development and management of these new entities, including episodic and continuity services.

Episodic Consulting Services

Episodic consulting services that are particularly important for the *development, implementation,* and *operation* of an ACO, include:

(1) *Capital formation advisory services*, e.g., assisting healthcare enterprising in leveraging their existing position within the healthcare industry to access both public and private capital markets to finance the creation of an ACO or ACO joint venture;
(2) *Feasibility analysis*, including the creation of pro-forma financial forecasts in support of a healthcare enterprises creation or participation in an ACO. Several metrics exist to assist the management of a healthcare enterprise in determining the financial feasibility of an ACO investment, including:
    a. *Payback and Discounted Payback Methods*;
    b. The *Average Accounting Rate of Return*;
    c. The *Net Present Value (NPV) Method*; and
    d. The *Internal Rate of Return (IRR) Method*;
(3) *Value Metrics analysis,* which provides the healthcare enterprise with information regarding the likelihood of success for an ACO and an objective methodology for selecting between various possible ACO partners;
(4) *Transaction planning and intermediary services* to assist with *mergers* and *acquisitions*, *transfer, lease,* or *otherwise contracting* for an ACO's participants, a provider/supplier, or a healthcare enterprise in the formation and structuring of an ACO;
(5) *Valuation (financial appraisal)* of specific *enterprises*, *assets*, and *services* involved in the transactions in the *formation* and *structuring* of an ACO;

44 "University of Maryland Medical System Corporation v. Rebecca Marie Waldt et al." 983 A.2d 112 (Md.Ct.App. 2009); "Maryland High Court Validates Rule Setting Minimum Requirements for Expert Witnesses" By Amy Lynn Sorrel, American Medical News, November 26, 2009, http://www.ama-assn.org/amednews/2009/ 11/23/prsk1126.htm (Accessed 1/14/10).

(6) *Legal services,* providing financial expertise for the development of organizational and governance structures and for the preparation of final transaction documents related to the *formation* and *structuring* of an ACO;
(7) *Consulting assistance* with provider *credentialing, accreditation, certification,* and *licensure*, including tracking and determination of primary care provider status and beneficiary assignment;
(8) *Consulting assistance* with the *calculation, allocation,* and *documentation* of ACO *shared savings for their distribution across providers*;
(9) *Turnaround/management restructuring services*;
(10) *Strategic planning services*, i.e., *marketing, feasibility* and *service line analysis*; and
(11) *Litigation support services.*

Continuity Services

Consulting services that are typically provided on an *ongoing basis* are commonly referred to as *continuity services*. There are several types of *continuity services* that may be provided to ACO participants, including:

(1) *Financial statement preparation* services for the ACO or the ACO affiliated management services organization;
(2) Assistance with *revenue cycle*, coding, billing, and *claims resolution* process for the ACO or the ACO affiliated management service organization;
(3) *Cost management: supply side* and *cost center analysis and performance improvement services* for the ACO or the ACO affiliated management services organization;
(4) *Information systems/information technology* project implementation or hardware or software upgrades for the ACO or the affiliated ACO participants;
(5) *Operational management services* for both the *coordination* and *maintenance* of the *informatics* requisite for *quality and cost reporting metrics* in documenting an ACO's achievement of required benchmarks and achievement of targets for shared saving payments; and
(6) *Corporate compliance and risk management audit services* for monitoring a wide variety of legal and regulatory issues on a consistent basis (important for ACOs as with most other healthcare provider organizations).

Some continuity services are provided on a *particular recurring timeframe*, typically annual, and are known as annuity services. A*nnuity services* can generate a *long-term relationship* between the healthcare consultant and the healthcare entity. Services that are typically provided on an *annual basis* include:

(1) *Financial audit and attestation services* - important for ACOs as with most other healthcare provider organizations, these annual audits review the *financial condition* and *solvency status*, as well as the *historical performance* of the ACO, identifying and commenting on items such as *financial profitability*, as well as *operational efficiencies* of revenue cycle elements - coding, billing, and claims resolution process; and
(2) *Tax filing services*—for federal, state, and local taxes, including provider taxes in certain markets.

CONSULTING METHODS

CONSULTING SKILLS

Two classes of skill sets are useful for effective healthcare professional practice consulting: strategic thinking and organizational management.

> Two classes of skills are required in consulting: strategic thinking and organizational management.

Strategic Thinking

Strategic thinking in the healthcare industry requires a sound understanding of general business principles, as well as a specialized knowledge of the healthcare market. This knowledge can be derived from both research (specific and general)[45] and experience (e.g., education, professional experience, training, and so forth). An accurate understanding of the depth of a consultant's experience is crucial to the decision to accept engagements relating to unique or specialized topics.

Organizational Management

The process of organizing and planning for each aspect of the engagement is important to the successful completion of a consulting engagement. The tools presented in this chapter, along with an understanding of a few sound project management principles, can serve as a basis for such a process.

BUSINESS DEVELOPMENT FOR CONSULTING SERVICES

Consultants in the healthcare industry face competition from established consulting firms, as well as an expanding field of new entrants. In order to identify potential clients for consulting engagements, a consulting firm must have a pre-engagement plan for dealing with healthcare professional practices. This plan may range from informal efforts to a well-articulated, extensive client "recruitment" program. Regardless of the selected scope, the efficacy of these programs crucially depends upon the quality of their planning and design. Ideally, such a program would involve the evaluation of potential clients using considered selection criteria, such as the methodology discussed in the following sections.

45 As discussed further in Section *Research*, below, and Chapter 4 of *Consulting Services*.

The Engagement Checklist

(1) Evaluate whether to accept the engagement.
   (a) Identify all parties to prospective engagement, for example, client, subject company or practice, company or practice owners, or hospital affiliations.
   (b) Perform a conflict search to disclose any potential conflicts to client and obtain permission or agreement before proceeding.
   (c) Perform a capabilities, resources, and skill sets assessment.
   (d) Prepare a schedule and timetable review.

(2) Develop an estimate of required chargeable hours and fees.
   (a) Fee indicators include the number of FTE providers, number of locations, and gross revenues.
   (b) Consider the complexity of legal structure and the availability and sufficiency of data.
   (c) Define the purpose, scope, and format of report.

(3) Prepare and submit to client a proposal letter and engagement agreement with schedule of professional fees.
   (a) Determine the fee basis (for example, straight hourly, hourly with cap, or flat fee).
   (b) Set forth required retainer and expense requirements.
   (c) Send two original agreements. The agreement letter should include instructions for the client to sign both originals and return both to consultant.

(4) Submit a preliminary request for documents and information in the proposal package as appropriate.

(5) Obtain a signed engagement agreement and retainer from client.
   (a) Sign both originals after they are returned from client with client's signature.
   (b) Receive one original (with both signatures) for client's records; the other will be kept in consultant's secured records.

(6) Develop a detailed work program.
   (a) Assign tasks to appropriate staff based on skill sets, experience, and availability.
   (b) Complete a preliminary budget.
   (c) Identify project milestones and estimated date of completion schedule in conformity with client needs and expectations.
   (d) Discuss with client; set up telephone conferences if necessary and appropriate.

(7) Collect and analyze the data appropriate for the engagement methods to be used.
   (a) General data includes economic, demographic, industry, specialty, managed care environment, utilization demand, and physician or population ratios.
   (b) Specific data (obtained from subject company) includes financial statements, tax returns, inventory list, staff listing, and other relevant data.
   (c) Discuss appropriate means to obtain data with client (for example, directly from subject company, from accountant(s), attorney(s), and so forth).

(8) File all documents in project binder(s) separated by numbered indices.
   (a) Prepare a table of contents detailing contents of binder(s) according to the numbering system.
   (b) Reserve the first section for correspondence and the second section for copies of client agreements (signed), copies of any invoices sent, and any work in progress details.

(9) Follow up with client or subject company regarding documents still needed, if necessary.
   (a) Make copies before writing, particularly if marking or writing on data and documents is necessary during the engagement process. Never write on original client documents, because they may have to be returned to the client at the end of the engagement.
   (b) Consider obtaining a representation letter regarding accuracy and validity of data submitted to consultant by client, if appropriate and possible.
(10) Instruct staff members to use the consulting and analysis methods selected under the supervision of an experienced consultant or supervisor.
(11) Complete trend analysis and comparison to industry norms.
(12) Perform ratio analysis of subject company and compare those ratios with industry or specialty ratios. Describe and analyze these comparisons in the narrative report.
(13) Prepare narrative to document and communicate to reader of the report all work performed and conclusions reached in a manner that will allow the reader to replicate consultant's work.
(14) Prepare a final discussion draft of the report.
   (a) Update general industry and specific sources of documents used (located near the end of report).
   (b) Attach copies of subject company financial data utilized at the appendix of the narrative report.
(15) Perform a detailed review of the work papers and final discussion draft of the report.
(16) Obtain an independent internal review of the work papers and report draft.
(17) Resolve any internal professional disagreements relative to methodologies employed.
(18) Prepare a *tick and tie* report. Correct any errors.
(19) Discuss engagement findings and final report draft with client.
   (a) Request that client disclose any errors of omission or commission that may have been discovered in client's review of the final discussion draft of the report.
(20) Determine that all review points and open items have been cleared.
(21) Prepare and bind the final report in multiple originals according to client agreement.
(22) Sign and apply embossed certification seal, if applicable, to the multiple original reports on both the transmittal letter and certification pages.
(23) File all work papers, data sources, and other engagement-related documents for secured filing.
(24) Prepare and submit final billing for engagement to client.
(25) Conduct a post-engagement review to evaluate staff performance and quality of final work product.

THE ENGAGEMENT PROCESS

Suspect Stage

The *Suspect* stage, which is very broad in scope, is the process by which potential clients are identified and information is collected to create *Prospects* for the consulting organization. The Suspect stage begins with determining the minimum preliminary criteria required by the organization to become a Prospect. This includes factors such as whether: (1) the practice is

inside a feasible geographic area to allow the consultant to perform the engagement; (2) the size and complexity of the practice in comparison to other clients the consultant has been able to deal with successfully; and (3) possible consulting needs of the organization that would match with any specialized expertise of the consulting organization. A database is then created identifying all possible candidate professional practices with contact information and basic market research for each of them. Information needed to convert the Suspects into Prospects is gathered from each identified practice (for example, size of practice, location(s), specialty(s), services, ownership, financial status, and so forth). This information can be obtained through public means (for example, directories, electronic databases, publications, and so forth) or from the individual professional practices themselves. This information is then organized in a format that allows the consulting organization to screen the Suspects and determine which qualify for the Prospect stage.

Prospect Stage

Although it is acknowledged that the consideration of specific professional practices necessarily involves a level of subjective evaluation, it is advantageous to develop a methodology to enhance the objective aspects of the consideration and selection process of specific professional practices to be approached for client engagements. The criteria chosen for this process, although not exhaustive of all significant aspects of a professional practice, reflects significant consideration of a reasonable and manageable scope of comparative factors. Representative selection criteria may include the following:

(1) Location or proximity of practice;
(2) Number and complexity of relationships with other practices or hospitals;
(3) Healthcare professional or practice reputation;
(4) Known consulting needs of the professional practice;
(5) Past or pending legal or professional action against the professional practice;
(6) Managed care payor relationships and insurance plan participation;
(7) Current stage in the professional practice lifecycle;
(8) Receptiveness of healthcare professionals to consulting conclusions;
(9) Practice size and patient volume; and
(10) Professional practice financial viability

Following the consideration and selection of specific professional practices as Prospects, preliminary proposals may be prepared on a case-by-case basis, and these professional practices can now be considered Targets.

Target Stage

The practices that qualify as *Targets*, given the criteria in the selection rating system matrix, are then surveyed (in depth) to:

(1) Verify and gauge their level of interest in a consulting engagement;
(2) Measure the professional practice's compatibility with the consultant's organization regarding consulting needs and philosophy;

(3) Determine the extent of the consulting engagement that the professional practice requires at this point;
(4) Determine the reasons and rationale for their consulting engagement;
(5) Discern the current areas of consensus, disagreement about the consulting engagement inside the practice, or both; and
(6) Discuss the emphasis of each member's participation in, and ownership of, steps of the consulting process.

The surveyed Prospects that meet all of the qualifications become Target practices. Due diligence and an analysis of any preliminary data received are then performed to prepare for converting the Targets into *Clients*.

Client Stage

The Client stage of the process is the point at which the planning process and negotiated details are memorialized by representatives of the client and consulting organization. Depending on the type of consultation being contemplated, the Client stage could be limited to developing an engagement agreement. Some of the tools utilized in this stage include follow-up requests for production of documents, site visits, interviews, and confidentiality agreements.

VISION, STRATEGIC INITIATIVES, AND TACTICAL PLANS

An effective technique for organizing the strategic planning process is by employing the following hierarchy: (1) vision; (2) strategic initiatives; and (3) tactical plans. It is important not to confuse the scope and definition of these terms:

- **Vision** answers "why" and is long term. A client must first define or confirm their vision; the resulting vision statement answers the long-term question: "Why are we in business?"
- **Strategic initiatives** answer "what" and "who." Strategic initiatives are intermediate and generally are objectives that, if met, would satisfy the vision of the organization.
- **Tactical plans** answer "how," "when," and "where." Tactical plans are short term and ever changing. The details of the organization's strategy must be addressed by defining tactical plans. Tactical plans describe how, when, and where the strategic initiatives will be met.

THE PHASES OF THE CONSULTING ENGAGEMENT

The purpose of consulting work is the provision of an opinion. The consulting process consists of four basic phases: proposal, research, analysis, and presentation.

The purpose of consulting work is the provision of an opinion.

Proposal

The first phase, *proposal*, involves business development activities culminating in the delivery of a proposal for specific consulting work. Business development is beyond the scope of this *Guide*, but numerous considerations exist that pertain to the development of a proposal and acceptance of an engagement that weigh heavily on the successful outcome of the project. A consulting pre-engagement acceptance form can lead a consultant through many of the questions that must be addressed before accepting an engagement, including the self-assessment of expertise, available resources (personnel and financial), any conflicts of interest, and many other issues.

Research

Once the consultant accepts an engagement, the next phase, *research*, involves compiling the necessary data to complete the assignment. The *specific research* consists of gathering information from the subject healthcare professional practice, including financial, business, operational, staffing, and other information. The other portion of this phase is the performance of *general research* using materials that are available through published governmental and private sources and may include information on topics such as the healthcare market, local economic conditions, competitors, healthcare facilities, managed care organizations, benchmarking statistics, reimbursement trends, specialty or industry trends, supply of practitioners and facilities, and many other relevant topics.[46]

Analysis

The third phase of an engagement, *analysis*, involves summarizing and interpreting the information gathered in the research phase and comparing the specific research with the general research. This analysis can range from providing simple summaries of the compiled research to an in-depth financial analysis. Consultants should understand a number of standard tools in performing an analysis, discussed below.

Summarization

This includes graphs, tables, matrices, abstracts, and so forth, which are designed to allow for the distillation of a body of information into one or more of its essential characteristics. These tools provide readers with an overview or comparison of the collected information.

Benchmarking

Benchmarking refers to the comparison of specific research data on the subject with industry norms. This may be as simple as a variance analysis on a single characteristic such as physician compensation, or as complex as an analysis involving numerous variables and may be incorporated within another, larger analysis.[47]

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46 Also discussed in Chapters 2 and 4 of *Consulting Services*.

47 See Chapter 2: *Benchmarking* in *Consulting Services,* for further discussion of the purpose of benchmarking and the various types and techniques utilized in healthcare valuation and analysis.

Forecasting

Forecasting generally involves trend analysis and aims to produce a prediction of future values or performance metrics. Financial pro formas, budgets, demand analysis, and space or staffing forecasts are all examples of this type of analysis.[48]

Complex or Compound Analysis

This is a type of multifaceted analysis that may incorporate several different tools to synthesize an overall conclusion. A large proportion of consulting analysis falls into this category. The following is an example of valuation engagement deliverables that would require a *complex* or *compound analysis*.

(1) Space allocation
    (a) Estimate of bed utilization based on average daily census
    (b) Location of services
(2) Payor source evaluation
    (a) Breakdown of payors
    (b) Self-pay mission alignment
(3) Information systems needs assessment
(4) Financial statements
    (a) Income and cash flow
    (b) Projected volume utilization or current utilization
(5) Staffing ratios and management structure
    (a) Staffing needs based on volume by discipline
    (b) Management structure
    (c) Efficiency of shift length
(6) Risk assessment
    (a) Strengths and weaknesses
    (b) Potential risks of a joint venture or merger
(7) Compliance assessment or gap analysis
    (a) Compliance Review and Corrective Actions
    (b) File Integrity Monitoring, medical record, or billing audit
(8) Organizational development
    (a) Philosophies or vision

Presentation

The final phase of a consulting engagement is *presentation*, which involves the reporting of results to clients or other designated third parties. Though presentation is nominally the final phase, aspects of the presentation phase, such as progress reports, updates, interim reports, and other intermediate communications will occur throughout the engagement. These reports may occur in a variety of formats, including business correspondence, oral presentations, and written

48 Several sections in Chapter 4: *Financial Valuation of Enterprises, Assets and Services* detail forecasting approaches for professional practice valuations.

reports. Generally, final reports should be formal, written in a technical style, and include the results of all analysis, as well as the opinion and recommendations of the consultant.

Record Management, Memorializing, and Archiving

The organization of any project requires diligence and planning in the maintenance of project and business records. The first step in performing this duty by the consultant involves memorializing events, discussions, correspondence, decisions, and records related to the engagement. The process includes the creation and retention of agendas and minutes for all meetings, results, or summaries of all appropriate decisions, options, lists, and other documents. Memorializing this information serves a number of functions, most notably the legal concerns of both the client and consultant, and provides a complete history of the events related to the project, as well as providing evidence to facilitate the resolution of disputes that may arise during the performance of an engagement.

The records management and archiving process consists of four consecutive functions: identification, classification, storage, and retrieval. These steps provide a framework for the design and maintenance of a records management system. Numerous document tracking systems and software packages are available for these purposes. Beyond the obvious reasons for careful design and upkeep of records management systems (such as internal project management capability), numerous legal and ethical standards require the diligent preservation of client business records.

The Engagement Process

Each consulting engagement will include specific project tasks and steps; however, most engagements will typically include certain standard procedures, as discussed below.

Professional Fees

It is important to discuss options for arranging professional fees and to understand how different types of engagements require different *fee arrangements*. Countless factors can affect the amount of time and resources an engagement requires and, therefore, have an impact on its profitability to the consultant. Fee options range from flat fees, by which payment is fixed regardless of the amount of work performed, to hourly rates, by which consultants are compensated based on their time spent on the project. Consultants must learn what factors can affect the amount of time spent on various engagement types and develop contracts using the appropriate fee arrangements. Fee levels will depend on the consultant's internal costs, as well as the value that their work and experience can command in the marketplace. Six common types of professional fee arrangements in consulting are shown in Table 1-2.

Table 1-2: Fee Option Discussion Matrix

Billing Options	Fee Option 1	Fee Option 2	Fee Option 3	Fee Option 4	Fee Option 5	Fee Option 6
Hourly Rate	X	X	X	X	X	
Retainer	X	X	X	X		
No Cap	X				X	
10% Cap Over Estimate		X	X	X		
Estimate at Client Expense		X				
Estimate at Limited Client Expense			X			
Estimate at Consultant Expense				X		
Flat Fee						X

HEALTHCARE CONSULTING ORGANIZATIONS AND ASSOCIATIONS

Numerous professional associations and organizations are related to the different types of healthcare consulting professionals. The following sections provide a brief overview of some of the most commonly recognized organizations and associations.

BUSINESS AND FINANCIAL CONSULTING GROUPS

American Institute of Certified Public Accountants (AICPA)

The American Institute of Certified Public Accountants (AICPA) is a national professional organization for accountants who have achieved CPA licensure. The mission of the AICPA is to work with state CPA organizations to provide its members with information, resources, and leadership "that enable[s] them to provide valuable services in the highest professional manner to benefit the public as well as employers and clients."[49] The AICPA and its predecessor organizations date as far back as 1887 and merged into its present form in 1936, at which time the AICPA agreed to restrict its membership to CPAs only.[50] The AICPA provides national representation for the promotion of AICPA members' interests before governments and regulatory bodies and seeks to provide the highest level of uniform certification and licensing standards in pursuit of promoting and protecting the CPA designation, as well as promoting public awareness and reliance in the integrity, objectivity, competency, and professionalism of CPAs. Further, the AICPA provides recruitment and educational services, in addition to setting performance standards for the profession.[51] As of March 2015, the AICPA's membership was comprised of approximately 365,466 "voting" members, including approximately 168,144

49 "AICPA Mission and History" The American Institute of Certified Public Accountants, http://www.aicpa.org/ABOUT/MISSIONANDHISTORY/Pages/MissionHistory.aspx (Accessed 3/2/15).

50 "History of the AICPA" The American Institute of Certified Public Accountants, http://www.aicpa.org/About/MissionandHistory/Pages/History%20of%20the%20AICPA.aspx (Accessed 3/2/15).

51 "AICPA Activities & Major Programs" The American Institute of Certified Public Accountants, http://www.aicpa.org/about/missionandhistory/pages/majorprograms.aspx (Accessed 3/2/15).

members in public accounting, 131,568 members in management accounting, 47,511 "retired and miscellaneous," 10,964 in government accounting, and 7,309 in education accounting.[52]

Certified Public Accountant (CPA)

CPAs are professionals with a background in accounting who have met certain education and experience requirements, including passing the Uniform CPA Exam.[53] Generally, CPAs are financial advisors who assist individuals, businesses, and other organizations in developing and achieving financial goals.[54] CPAs include both chief financial officers of major corporations and accounting advisors to small local businesses.[55] Services provided by CPAs may include such public accounting activities as auditing, assurance services, environmental accounting, forensic accounting, information technology services, international accounting, consulting services, personal financial planning, and tax advisory services.[56] As indicated previously, the CPA credential requires certain educational requirements, including 150 semester hours of college coursework in accounting, as well as passing the Uniform CPA Exam.[57]

Accredited in Business Valuation (ABV)

The Accredited in Business Valuation (ABV) credential is designated to CPAs who are experts in the field of business valuation.[58] Requirements for ABV certification include: (1) AICPA membership and good standing, (2) valid and unrevoked CPA certification, (3) a passing score on the ABV examination, and (4) payment of a $360 credentialing fee.[59] Recertification requirements must be met every three years and include (1) AICPA membership and good standing, (2) valid and unrevoked CPA certification, (3) completion of at least sixty hours of related lifelong learning during the preceding three years, and (4) electronic submission of intent to maintain compliance with all recertification requirements.[60] The examination requirement may be waived for those applicants who hold the Accredited Senior Appraiser (ASA) or Accredited Member (AM) credential issued by the American Society of Appraisers.[61]

52 "About the AICPA" The American Institute of Certified Public Accountants, http://www.aicpa.org/About/Pages/About.aspx (Accessed 3/2/15).
53 "What Does It Take to Become a CPA," Steps to Becoming a CPA.pptx, retrieved from http://www.aicpa.org/BECOMEACPA/GETTINGSTARTED/Pages/default.aspx (Accessed 3/2/15).
54 Ibid.
55 "AICPA - Frequently Asked Questions FAQs - Become a CPA" http://www.aicpa.org/becomeacpa/gettingstarted/frequentlyaskedquestions/Pages/default.aspx (Accessed 3/2/15).
56 Ibid.
57 "What Does It Take to Become a CPA," Steps to Becoming a CPA.pptx, retrieved from http://www.aicpa.org/BECOMEACPA/GETTINGSTARTED/Pages/default.aspx, (Accessed 3/2/15).
58 "AICPA - Accredited in Business Valuation Credential" The American Institute of Certified Public Accountants, http://www.aicpa.org/interestareas/forensicandvaluation/membership/pages/abvcredentialoverview.aspx (Accessed 3/2/15).
59 "Application Kit: A Guide to the AICPA Accredited in Business Valuation Credential" The American Institute of Certified Public Accountants, http://www.aicpa.org/InterestAreas/ForensicAndValuation/Membership/DownloadableDocuments/ABV_Credential_Application_Kit_web.pdf, (Accessed 3/4/15).
60 "Application Kit: A Guide to the AICPA Accredited in Business Valuation Credential" The American Institute of Certified Public Accountants, http://www.aicpa.org/InterestAreas/ForensicAndValuation/Membership/DownloadableDocuments/ABV_Credential_Application_Kit_web.pdf, (Accessed 3/4/15).
61 Ibid.

American Society of Appraisers (ASA)

The American Society of Appraisers (ASA) is a global organization of appraisal professionals and others involved in the appraisal profession. ASA is the oldest appraisal organization and the only organization that represents all appraisal specialties.[62] The ASA publishes a code of ethics and principles of appraisal practice as well as a set of standards for business valuation.[63] The ASA is also a sponsor of the Appraisal Foundation and works together with the foundation to create and update the *Uniform Standards of Professional Appraisal Practice*, the standard criteria that professional appraisers must follow.[64]

Accredited Member (AM), and Accredited Senior Appraiser (ASA)

Appraisers can be accredited in a variety of appraisal specialties, such as appraisal review and management, business valuation, gems and jewelry, machinery and technical specialties, personal property, and real property.[65] At least two years of experience are required to be an Accredited Member and a minimum of five years appraisal experience is necessary before consideration for Accredited Senior Appraiser status.[66] This must be supported by an appropriate experience log.[67] Accreditation also requires either a four-year college degree or double its equivalent in additional work experience.[68] Additionally, applicants are required to have an appraisal report or reports issued within the last two years that should support the experience reported on the application.[69]

Institute of Business Appraisers (IBA)

Established in 1978, the Institute of Business Appraisers (IBA) is the oldest professional society devoted solely to the appraisal of closely held businesses.[70] The IBA offers education to group members and the general public through seminars, media, workshops, and conferences. The IBA also offers business appraisal education, industry research, and business appraisal certifications including the following: (1) Certified Business Appraiser (CBA) and (2) Master Certified Business Appraiser (MCBA). See the following sections for detailed discussion of each of these certifications.

Certified Business Appraiser (CBA)

The CBA certification is a professional designation that signifies a level of competence attained by accomplished business appraisers and grants its recipients special respect and esteem among other appraisers, the courts, and the business appraisal community at large.[71] To obtain CBA

62 "ASA Home" American Society of Appraisers, http://www.appraisers.org/Home (Accessed 3/2/15).
63 "Professional Standards and Ethics" American Society of Appraisers, http://www.appraisers.org/About/professional-standards-ethics (Accessed 3/2/15).
64 Ibid.
65 Ibid.
66 "Accreditation" American Society of Appraisers, http://www.appraisers.org/Accreditation (Accessed 3/2/15).
67 "Join ASA" American Society of Appraisers, http://www.appraisers.org/Membership/join-asa (Accessed 3/2/15).
68 Ibid.
69 Ibid.
70 "About Us" The Institute of Business Appraisers, http://www.go-iba.org/aboutus.aspx (Accessed 3/2/15).
71 "Certified Business Appraiser" The Institute of Business Appraisers, 2015, http://www.go-iba.org/certification/ce http://www.go-iba.org/certification/certifiedbusinessappraisers.aspxrtifiedbusinessappraisers.aspx (Accessed 3/2/15).

certification, the applicant must hold a four-year college degree or equivalent.[72] A five-hour, proctored CBA written exam covering the theory and practice must then be successfully completed.[73] Finally, the applicant must submit two demonstration reports that illustrate a high level of skill, knowledge, and judgment as a business appraiser.[74]

Master Certified Business Appraiser (MCBA)

MCBA designation, recognized by Institute of Business Appraisers, is reserved for the most qualified and experienced CBAs.[75] The applicant must have a current Certified Business Appraiser designation that has been held for not less than ten years, and must have at least fifteen years of full-time experience as a business appraiser.[76]

National Association of Certified Valuation Analysts (NACVA)

The National Association of Certified Valuation Analysts (NACVA), established in 1990, is an organization that supports practitioners of business asset valuation, intangible asset valuation, and financial forensic services with training and certification for valuation professionals.[77] They provide training courses through the Consultants Training Institute, offer software support for valuation in the form of their ValuSource software, and publish KeyValueData research for their members to view and analyze the details of healthcare transactions.[78] Membership requires at least thirty-six hours of continuing professional education every three years in the areas of accounting, tax, or financial analysis.[79]

Certified Valuation Analysts

CVA certification is available to licensed CPAs, or those who have both a business degree and "substantial experience" in business valuation (e.g., two or more years of full-time or equivalent experience in business valuation; or having performed ten or more business valuations; or are able to demonstrate substantial knowledge of relevant theory, methodologies, and practices).[80] All applicants must submit references and pass a comprehensive, five-hour, multiple-choice, proctored exam, and can attend an optional five-day training session before one is decided to have a level of expertise deemed credible by NACVA.[81]

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72 "CBA/MCBA Applicant's Handbook", Institute of Business Appraisers, June 2014, www.go-iba.org/files/CBA_MCBA_Applicants_Handbook_4-25-14_Final.pdf (Accessed 2/27/15).
73 Ibid.
74 "Certified Business Appraiser" The Institute of Business Appraisers, 2015, http://www.go-iba.org/certification/ce http://www.go-iba.org/certification/certifiedbusinessappraisers.aspxrtifiedbusinessappraisers.aspx (Accessed 3/2/15).
75 "CBA/MCBA Applicant's Handbook", Institute of Business Appraisers, June 2014, www.go-iba.org/files/CBA_MCBA_Applicants_Handbook_4-25-14_Final.pdf (Accessed 2/27/15).
76 Ibid.
77 "Join NACVA: NACVA's Beginnings" National Association of Certified Valuation Analysts, 2015, http://www.nacva.com/association/beginnings.asp (Accessed 3/2/15).
78 "NACVA: Valusource," National Association of Certified Valuation Analysts, http://nacva.valusource.com/ (Accessed 3/4/15).
79 "Recertification and Reporting Requirements" National Association of Certified Valuation Analysts, http://www.nacva.com/recert/r_recert.asp (Accessed 3/4/15).
80 "Qualifications for the CVA—Certified Valuation Analyst Designation" National Association of Certified Valuation Analysts, www.nacva.com/certifications/C_cva.asp (Accessed 2/27/15).
81 Ibid.

Master Analyst in Financial Forensics (MAFF)

The MAFF credential is designed to provide assurance that the designee possesses expertise in financial forensics. Specialty areas available to the applicant include commercial damages and lost profits, matrimonial litigation, bankruptcy, insolvency, and restructuring, business valuation in litigation, business and intellectual property damages, forensic accounting, and fraud risk management.[82] Basic requirements to obtain this designation dictate that the applicant must have at least one prior NACVA-approved professional designation and must have professional experience including at least ten engagements or at least 1,000 hours experience in one of the aforementioned specialty areas.[83]

CFA Institute

The CFA Institute is an international, nonprofit association of investment professionals and professional societies focusing on offering educational opportunities and promoting ethical standards among its members.[84] Its mission is to "lead the investment profession globally by setting the highest standards of ethics, education, and professional excellence."[85] It also offers certification as a Chartered Financial Analyst (CFA) and a Certificate in Investment Performance Measurement (CIPM).[86]

Chartered Financial Analyst

A CFA is an investment professional who has passed all three of the CFA exams testing his or her competence and integrity in managing portfolios and analyzing investments and fulfilled other experiential requirements.[87] To enter the examination program requires a bachelor's degree or a combined four years of education and relevant professional work experience.[88] To become a charterholder, an applicant must participate in an assigned curriculum, take the three levels of the CFA exam sequentially, and have acquired four years of relevant investment industry work experience.[89]

Certificate in Investment Performance Measurement (CIPM)

A CIPM is an investment professional who has passed the CIPM exam testing his or her competence in risk evaluation related to globally relevant and practice-based investment.[90]

82 Ibid.
83 Ibid.
84 "Mission & Vision" Chartered Financial Analyst Institute, http://www.cfainstitute.org/about/vision/Pages/index.aspx (Accessed 3/2/15).
85 Ibid.
86 "Programs" Chartered Financial Analyst Institute, http://www.cfainstitute.org/programs/Pages/index.aspx (Accessed 3/2/15).
87 "Become a CFA Charterholder" Chartered Financial Analyst Institute, http://www.cfainstitute.org/programs/cfaprogram/charterholder/Pages/index.aspx (Accessed 2/27/15).
88 Ibid.
89 Ibid.
90 "CIPM Program" Chartered Financial Analyst Institute, 2015, http://www.cfainstitute.org/programs/cipm/Pages/index.aspx (Accessed 3/2/15).

Alliance of Merger and Acquisition Advisors (AM&AA)

The Alliance of Merger and Acquisition Advisors (AM&AA) was founded in 1998 and is a collection of CPAs, attorneys, and other corporate financial advisors who combine their knowledge and experience to better serve the special needs of middle-market clients.[91] AM&AA provides business research tools and a variety of opportunities for collaboration between members as well as continuing education and credentialing programs.[92]

Certified Merger and Acquisition Advisor (CM&AA)

The Certified Merger and Acquisition Advisor certification is meant to maintain the AM&AA's standards of professional excellence and serve as a benchmark for professional achievement within the corporate financial advisory and transactional services industry.[93] This involves training and assessment in the areas of the private capital marketplace, merger and acquisition (M&A) engagements, corporate M&A development, business valuation and M&A standard practices, tax issues, legal issues, and growth and acquisition financing.[94]

HEALTHCARE CONSULTING GROUPS

American Association for Physician Leadership

The American Association for Physician Leadership, formerly known as The American College of Physician Executives (ACPE), is an organization that assists physicians who hold or aspire toward executive positions in their healthcare professional practices.[95]

Certified Physician Executive (CPE)

The CPE indicates that the designated MD or DO has training and expertise in medical management.[96] Board certification is issued by the Certifying Commission in Medical Management, which requires that candidates (1) graduate from an approved medical program (either through the Liaison Committee on Medical Education, American Osteopathic Association, or Educational Commission for Foreign Medical Graduates), (2) hold a valid medcal license, (3) have three years of experience, (4) hold board certification in a medical specialty area, (5) complete 150 hours of management education or a graduate management degree (in areas of business, medical management, science, health administration, or public health), (6) have one year of medical management experience, and (7) successfully complete a three and a half day certification program, including a written exam and a verbal video-recorded

91 "About Us" Alliance of Merger and Acquisition Advisors, http://www.amaaonline.com/about-us/ (Accessed 3/2/15).
92 Ibid.
93 "CM&AA" Alliance of Merger and Acquisition Advisors, www.amaaonline.com/cmaa (Accessed 2/27/15).
94 "CM&AA Credentialing Program" Alliance of Merger and Acquisition Advisors, www.amaaonline.com/cmaa (Accessed 2/27/15).
95 "About Us" American Association for Physician Leadership, http://www.physicianleaders.org/join/aboutus (Accessed 3/2/15).
96 "Certified Physician Executive" Certifying Commission in Medical Management, http://www.ccmm.org (Accessed 3/4/15).

presentation to a panel of health care leaders.[97] Physicians who receive the CPE designation are referred to as *diplomates*.[98]

Medical Group Management Association (MGMA)

The Medical Group Management Association (MGMA), consisting of organizations representing almost 280,000 physicians, seeks to improve the performance of medical group practice organizations and the professionals they employ.[99] It began as the National Association of Clinical Managers in 1926 and changed its name to the Medical Group Management Association in 1963 to highlight the continued expansion in the diversity of management roles found in group practices.[100]

Healthcare Consulting Group

The MGMA Healthcare Consulting Group, with members averaging more than thirty years of healthcare consulting experience, can consult group practices and professionals in the areas of academic billing and coding, executive recruitment, information technology infrastructure assessment, strategic planning and business development, revenue cycle analysis, patient care systems and workflow solutions, and interim management.[101]

Healthcare Financial Management Association (HFMA)

The Healthcare Financial Management Association (HFMA) is an organization for healthcare financial management executives and other leaders in the healthcare field.[102] The HFMA assists these professionals by (1) providing education and analysis, (2) developing coalitions with other healthcare associations to accurately represent the healthcare finance profession, (3) educating key decision makers on the important aspects of maintaining fiscally sound healthcare organizations, and (4) working with stakeholders to improve the healthcare industry by overcoming deficiencies in knowledge, best practices, and standards.[103] The HFMA's vision is: "To be the indispensable resource for healthcare finance."[104] The HFMA offers two certification levels, described in the following sections.

Certified Healthcare Financial Professional (CHFP)

The Certified Healthcare Financial Professional (CHFP) designation is achieved by professionals with proven knowledge and expertise in healthcare finance.[105] Requisites for this designation include the successful completion of a proctored exam, which tests the candidate's knowledge of

97 "CPE Flyer" American Association for Physician Leadership, http://www.physicianleaders.org/docs/default-source/web-documents/cpe-flyer-web.pdf (Accessed 3/4/15).
98 Ibid.
99 "About Medical Practice Management" Medical Group Management Association, 2015, http://www.mgma.com/about/aboutmgma/aboutmedicalpracticemanagement (Accessed 3/4/15).
100 "About the MGMA" Medical Group Management Association, 2009, http://mgma.com/about/ (Accessed 11/23/09).
101 "About the MGMA Health Care Consulting Group - MGMA" Medical Group Management Association, http://www.mgma.com/practice-resources/consulting/about-the-mgma-health-care-consulting-group (Accessed 3/3/15).
102 "About HFMA" Healthcare Financial Management Association, http://www.hfma.org/about/ (Accessed 3/2/15).
103 Ibid.
104 Ibid.
105 "CHFP" Healthcare Financial Management Association, http://www.hfma.org/chfp/ (Accessed 2/27/15).

the business of healthcare. The candidate must then successfully complete course assessment and successful completion of module 2 case study exercises related to business challenges in the healthcare industry. The requirements also include current and active HFMA membership[106]

Fellow of the Healthcare Financial Management Association (FHFMA)

The HFMA's second certification level is the Fellow of the Healthcare Financial Management Association (FHFMA). This certification is only available to those who have already received the CHFP designation, and it represents exemplary educational achievement, experience, and volunteer service to the healthcare finance industry.[107] To qualify, an applicant must have (1) five years total as a regular or advanced HFMA member, (2) a bachelor's degree or 120 semester hours from an accredited college or university, (3) a reference from an FHFMA or current elected HFMA chapter officer, and (4) volunteer activity in healthcare finance within three years of applying for the FHFMA designation.[108]

National Society of Certified Healthcare Business Consultants

The National Society of Certified Healthcare Business Consultants was founded in 2006 as a combination of the Institute of Certified Healthcare Business Consultants, the National Association of Healthcare Consultants, and the Society of Medical Dental Management Consultants.[109] The society now fulfills the combined missions of its parent organizations, including the advancement the field of healthcare consulting, the establishment of standards of qualifications and ethics for consultants, and the sponsorship of a certification program for its members.[110] It also promotes its members to the healthcare industry and facilitates the sharing of management techniques and individual skills and provides a wide variety of educational programs and other benefits to its members.[111]

Certified Healthcare Business Consultant (CHBC)

A certified healthcare business consultant (CHBC) must pass an examination showing proficiency in business planning and organization, coding and billing practices, legal liability and compliance, employment issues, marketing and quality control, and financial aspects, including accounting, valuation, financial planning, and tax issues.[112] These diverse areas are tested to ensure that the CHBC has a broad understanding of the healthcare business environment.[113]

American Health Information Management Association (AHIMA)

The American Health Information Management Association (AHIMA) dates back to 1928, when the Association of Record Librarians of North America was founded by the American College of

106 Ibid.
107 "FHFMA" Healthcare Financial Management Association, http://www.hfma.org/Content.aspx?id=512 (Accessed 3/20/15).
108 Ibid.
109 "History of the NSCHBC" National Society of Certified Healthcare Business Consultants, http://www.nschbc.org/about/history.cfm (Accessed 3/4/15).
110 Ibid.
111 Ibid.
112 "Certification" National Society of Certified Healthcare Business Consultants, www.nchbc.org/certification/index.cfm (Accessed 3/2/15).
113 Ibid.

Surgeons, in recognition of the importance of importance of patient medical records.[114] In 1938, the association changed its name to the American Association of Medical Record Librarians and moved forward with the creation of standards and regulations that established its members as medical records experts. In 1970, it became the American Medical Record Association before becoming AHIMA in 1991.[115] The association now works toward addressing issues such as implementation of EHRs in addition to working toward adopting and implementing clinical coding systems per *International Statistical Classification of Diseases and Related Health Problems*, Tenth Edition (ICD-10).[116]

The Commission on Certification for Health Informatics and Information Management is the AHIMA commission responsible for ensuring the competency of professionals providing health information management services.[117]

Certified Coding Specialist (CCS)

A certified coding specialist (CCS) categorizes medical data from patient records, mainly in hospital settings.[118] The CCS responsibilities include reviewing patient records and applying proper numeric codes for each diagnosis, maintaining expertise in the ICD-9-CM and Current Procedural Terminology coding systems, and possessing knowledge about medical terminology, disease processes, and pharmacology.[119] The CCS credential exhibits a practitioner's tested data quality and integrity skills, ability, and a high level of coding proficiency.[120] CCS candidates must have earned a high school diploma or have an equivalent educational background and, although not required, at least three years of on-the-job experience.[121]

Certified Coding Associate (CCA)

The Certified Coding Associate (CCA) designation is often viewed as a starting point for a person entering a coder career, and it demonstrates competency in the health information field and a commitment to the coding profession.[122] CCA examination candidates must have a high school diploma or equivalent and, although not required, at least six months of coding experience.[123]

Certified in Healthcare Privacy and Security (CHPS)

The Certified in Healthcare Privacy and Security (CHPS) designation signifies competence in the design, implementation, and administration of comprehensive security and privacy programs in

114 "AHIMA & Our Work" American Health Information Management Association, http://www.ahima.org/about/aboutahima?tabid=story (Accessed 3/2/15).
115 Ibid.
116 Ibid.
117 "About CCHIIM" American Health Information Management Association, http://ahima.org/certification (Accessed 3/19/10).
118 "Commission on Certification for Health Informatics and Information Management (CCHIIM) Candidate Guide" American Health Information Management Association, http://www.ahima.org/~/media/AHIMA/Files/Certification/Candidate_Guide.ashx (Accessed 2/27/15).
119 Ibid.
120 Ibid.
121 Ibid.
122 Ibid.
123 Ibid.

various healthcare organizations.[124] This certification demonstrates a concentration on the privacy and security aspects of health information management.[125]

Certified Health Data Analyst (CHDA)

The Certified Health Data Analysis (CHDA) designation provides recognition of mastery and expertise in health data analysis.[126] This certification ensures practitioners obtain the ability to interpret and utilize relevant healthcare related data.[127] The CHDA-certified practitioner demonstrates broad organizational knowledge and communication skills with individuals and groups at multiple levels.[128]

Academy of Healthcare Management

Founded in 1997 by America's Health Insurance Plans and Blue Cross Blue Shield Association, the Academy for Healthcare Management works to provide online education for healthcare, business, or insurance professionals seeking education on the health insurance plan industry.[129]

Professional, Academy for Healthcare Management

The first level of the academy's certifications is the designation of Professional, Academy for Healthcare Management.[130] This certification requires completion of a course covering the basics of health insurance plans, healthcare providers, as well as operational, regulatory, legislative, and ethical issues.[131]

Fellow, Academy for Healthcare Management (FAHM)

The academy's more advanced certification, Fellow, Academy for Healthcare Management completes the introductory course mentioned previously as well as additional coursework in governance and regulation, health plan finance and risk management, network management, and medical management.[132]

124 "Certified in Healthcare Privacy and Security (CHPS)" American Health Information Management Association, http://www.ahima.org/certification/chda (Accessed 3/2/14).
125 Ibid.
126 "Certified Health Data Analyst (CHDA)" American Health Information Management Association, http://www.ahima.org/certification/chda (Accessed 3/2/14).
127 Ibid.
128 Ibid.
129 "About the Academy for Healthcare Management" America's Health Insurance Plans, http://www.ahip.org/ciepd/ahm/index.html (Accessed 3/2/15).
130 "Professional, Academy for Healthcare Management" America's Health Insurance Plans, http://www.ahip.org/ciepd/options/pahm.html (Accessed 2/27/15).
131 Ibid.
132 "Fellow, Academy for Healthcare Management" America's Health Insurance Plans, www.ahip.org/ciepd/options/fahm.html (Accessed 2/27/15).

CONCLUSION

This synopsis of the modalities of healthcare professional practice consultancy, the corresponding services that may be provided, the process of business development for consultants seeking to provide such services, and the various organizations and associations that represent professionals in healthcare consulting industry may be used, in conjunction with the other chapters in this *Guide*, to assist in the understanding of subject enterprises (for example, professional practices) within the context of the healthcare market. This *Guide* should not be considered comprehensive or universal in its scope or applicability, but rather as a basic framework and preliminary working knowledge which may direct more focused, specific, and time-sensitive research on the issues that are pertinent to a particular client's practice in order to further tailor and bolster the credibility of consulting services rendered.

In the ever-evolving regulatory, research, competitive, and technological environments of the healthcare industry, the knowledge required of a healthcare consultant may stem from a broad range of educational and experiential backgrounds. Additionally, the wealth of certification and additional educational opportunities for consultants in the healthcare field will contribute to growing the field of healthcare consulting. Note that given the highly regulated nature of the healthcare industry, consultants, although unable to offer a legal opinion, should be well versed in the most up-to-date regulatory guidelines, and they may, in this respect, be likely to work closely with healthcare attorneys. As new consulting opportunities arise in lieu of the ever-increasing regulatory scrutiny regarding healthcare enterprise transactions and employment arrangements, this type of collaboration is likely to become more and more commonplace.

Overall, within the context of the four pillars, the various modalities and types of healthcare consulting activities discussed previously, three key areas will undergo significant growth (both in quantity and type of consulting engagements): (1) competition and income distribution; (2) benchmarking; and (3) financial valuation, each of which is discussed in further detail in the subsequent Chapters in this book of the *Guide*.

Key Sources

Key Source	Description	Citation	Website
Internal Revenue Service (IRS)	The IRS is a bureau of the United States Department of the Treasury, and is the primary department that acts as a tax administrator for the government with full authority to administer and enforce the internal revenue laws.	"The Agency, Its Mission and Statutory Authority," Internal Revenue Service, http://www.irs.gov/uac/The-Agency,-its-Mission-and-Statutory-Authority www.irs.gov/irs/article/0,,id=98141,00.html (Accessed March 16, 2015).	www.irs.gov
Centers for Medicare and Medicaid Services (CMS)	CMS administers the Medicare, Medicaid, and Children's Health Insurance Program programs. CMS is responsible for setting reimbursement rates under Medicare and Medicaid. The CMS website contains important information for beneficiaries of these programs, as well as for guidelines for providers.	"Home - Centers for Medicare & Medicaid Services," Centers for Medicare & Medicaid Services, www.cms.hhs.gov (Accessed 3/26/2015).	www.cms.hhs.gov

(continued)

Key Source	Description	Citation	Website
"RMA Annual Statement Studies" published by the Risk Management Association	Standard source covering practice financial statements with industry averages for a variety of industry categories.	"Benefits of Risk Management: About RMA | Risk Management Association," Risk Management Association, 2015, www.rmahq.org/about-rma (Accessed 3/26/2015).	http://rmahq.org/about-rma
"Financial Studies of the Small Business" published by Financial Research Associates	Standard source covering practice financial statements with industry averages for a variety of industry categories.	"Financial Research Associates, LLC - Financial Conferences » About Us," Financial Research Associates, LLC, 2015, www.frallc.com/about.aspx (Accessed 3/26/ 2015).	www.frallc.com/about.aspx
"Tax Statistics" available through the Internal Revenue Service	Standard source covering tables, articles, and data that describe and measure elements of the U.S. tax system.	"Tax Statisics," Internal Revenue Service, 2015, http://www.irs.gov/uac/Tax-Stats-2 (Accessed 3/26/2015).	http://www.irs.gov/uac/Tax-Stats-2
FactSet Research Systems, Inc.	Resource for global merger and acquisition market data.	"Mergers and Acquisitions — FactSet Research Systems," FactSet Research Systems, http://www.factset.com/about (Accessed 3/26/2015).	http://www.factset.com/data/company_data/mergers_acq
Control Premium Study	Quarterly series study that compiles control premiums of publicly traded stocks by attempting to eliminate the possible distortion caused by speculation of a deal.	Compiled by Mergerstat/Shannon Pratt's BV Resources. "Mergerstat/ BVR Control Premium Study - Quantify Minority Discounts and Control Premiums," Business Valuation Market Data, http://www.bvmarketdata.com/CPSAdvSearch.asp (Accessed 3/26/2015).	http://www.bvmarketdata.com/CPSAdvSearch.asp
Business Valuation Resources (BVR)	"Every top business valuation firm depends on BVR for authoritative market data, continuing professional education, and expert opinion. Rely on BVR when your career depends on an unimpeachable business valuation. Our customers include business appraisers, certified public accountants, merger and acquisition professionals, business brokers, lawyers and judges, private equity and venture capitalists, owners, CFOs, and many others. Founded by Dr. Shannon Pratt, BVR's market databases and analysis have won in the courtroom—and the boardroom—for over a decade."	"About Business Valuation Resources," Business Valuation Resources, www.bvresources.com/ (Accessed 3/26/2015)	www.bvresources.com

Key Source	Description	Citation	Website
American Institute of Certified Public Accountants (AICPA)	"The American Institute of Certified Public Accountants is the national, professional organization for all Certified Public Accountants. Its mission is to provide members with the resources, information, and leadership that enable them to provide valuable services in the highest professional manner to benefit the public as well as employers and clients. In fulfilling its mission, the AICPA works with state CPA organizations and gives priority to those areas where public reliance on CPA skills is most significant."	"AICPA - AICPA Mission and History," American Institute of CPAs, http://www.aicpa.org/ABOUT/MISSIONANDHISTORY/Pages/MissionHistory.aspx (Accessed 3/26/2016).	www.aicpa.org
Institute of Business Appraisers (IBA)	"The Institute of Business Appraisers is the oldest professional society devoted solely to the appraisal of closely-held businesses. Established in 1978, the Institute is a pioneer in business appraisal education and professional accreditation."	"The Institute of Business Appraisers," Institute of Business Appraisers, www.go-iba.org/ (Accessed 3/26/2015).	www.go-iba.org

Associations

Type of Association	Name	Description	Citation	Contact Information
National Organization	American Association for Physician Leadership, The American College of Physician Executives (ACPE)	The ACPE is an organization aimed at creating superior managers for healthcare word wide, assisting physicians who hold or aspire toward executive positions in their healthcare professional practices.	"About Us, The Story: American College of Physician Executives" American Association for Physician Leadership by the American College of Physician Executives, 2015009, http://www.physicianleaders.org/join/about-uswww.acpe.org/Footer/AboutACPE.aspx (Accessed 3/3/15).	The American College of Physician Executives 400 N. Ashley Drive Suite 400 Tampa, FL 33602 Phone: (800) 562-8088 Fax: (813) 287-8993 E-mail: infoacpe@physicianleadersacpe.org www.physicianleadersacpe.org
Professional Association	American Health Information Management Association (AHIMA)	The AHIMA works toward addressing such issues as implementation of electronic health records in addition to working toward adopting and implementing clinical coding systems.	"AHIMA & Our Work History" The American Health Information Management Association, www.ahima.org. (Accessed 3/2/15).	American Health Information Management Association 233 N. Michigan Avenue, 21st Floor Chicago, IL 60601-5809 Phone: 312-233-1100 Fax: 312-233-1090 E-mail: info@ahima.org www.ahima.org
National Professional Organization	American Institute of Certified Public Accountants (AICPA)	AICPA works with state Certified Public Accountants (CPAs) organizations to provide its members with information, resources, and leadership "that enable them to provide valuable services in the highest professional manner to benefit the public as well as employers and clients."	"AICPA - AICPA Mission and History" The American Institute of Certified Public Accountants, http://www.aicpa.org/ABOUT/MISSIONANDHISTORY/Pages/MissionHistory.aspx (Accessed 3/2/15); "AICPA - AICPA Bylaw Section 900," The American Institute of Certified Public Accountants, http://www.aicpa.org/About/Governance/Bylaws/Pages/sec900.aspx (Accessed 3/2/15).	American Institute of Certified Public Accountants 1211 Avenue of the Americas New York, NY 10036 Phone: 888-777-707 Fax: 800-362-5066 E-mail: service@aicpa.org www.aicpa.org

Type of Association	Name	Description	Citation	Contact Information
Professional Association	The Alliance of Merger & Acquisition Advisors (AM&AA)	The AM&AA is a collection of CPAs, attorneys, and other corporate financial advisors who combine their knowledge and experience to better serve the special needs of middle-market clients and provide business research tools and a variety of opportunities for collaboration between members as well as continuing education and credentialing programs. AM&AA also offers continuing education to members in the form of conferences, programs, and the Certified Merger & Acquisition Advisor credential, as well as access to OneSource, a Web-based business and financial resource.	"About Us, AM&AA: Alliance of Merger & Acquisition Advisors" Brochure, Alliance of Merger and Acquisition Advisors, www.amaaonline.com /files/about-us/ maabro09.pdf (Accessed 3/2/15).	Alliance of Merger & Acquisition Advisors 222 N. LaSalle Street, Suite 300 Chicago, IL 60601 Phone: (877) 844-2535 Email: info@amaaonline.org www.amaaonline.com
International Professional Organization	American Society of Appraisers (ASA)	The oldest appraisal organization, the ASA is the only professional valuation organization representing all appraisal specialties. ASA helped create the Appraisal Foundation and follows the *Uniform Standards of Professional Appraisal Practice*, the criteria followed by professional appraisers. In addition, the ASA educates, accredits, and helps the public and professionals locate ASA accredited appraisers.	"ASA Home" American Society of Appraisers, www.appraisers.org, (Accessed 3/4/15): "About Us" American Society of Appraisers" www.appraisers.org About (Accessed 3/4/15).	American Society of Appraisers 11107 Sunset Hills Rd., Suite 310 Reston, VA 20190 Phone: 800-ASA-VALU and 800-272-8258 Fax: 703-742-8471 E-mail: asainfo@appraisers.org www.appraisers.org

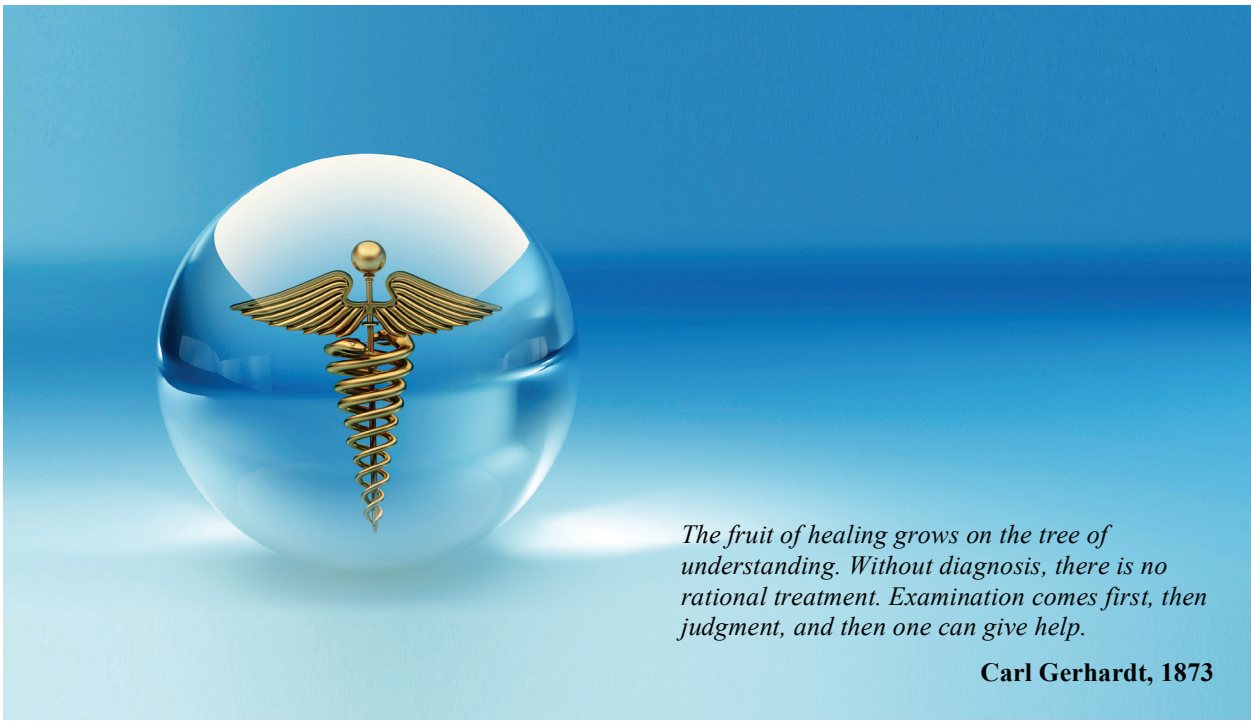
(continued)

Type of Association	Name	Description	Citation	Contact Information
International Nonprofit Association	CFA Institute	CFA Institute is committed "to lead the investment profession globally by promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society." The institute offers the self-study graduate level CFA Program and the Certificate in Investment Performance Measurement program.	"Mission & Vision" CFA Institute, www.cfainstitute.org (Accessed 3/2/15); "Worldwide Contact Information" CFA Institute, www.cfainstitute.org/utility/contact/Pages/worldwide_contacts.aspx (Accessed 3/4/15).	CFA Institute Americas Main Office 915 East High Street Charlottesville, VA 22902 Phone: 800-247-8132 E-mail: info@cfainstitute.org www.cfainstitute.org
Professional Association	Healthcare Financial Management Association (HFMA)	The HFMA is an organization for healthcare financial management executives and other leaders in the healthcare field. HFMA assists these professionals by: (1) providing education and analysis; (2) developing coalitions with other healthcare associations to accurately represent the healthcare finance profession; (3) educating key decision makers on the important aspects of maintaining fiscally sound healthcare organizations; and (4) working with stakeholders to improve the healthcare industry by overcoming deficiencies in knowledge, best practices, and standards.	"About HFMA" Healthcare Financial Management Association, www.hfma.org/about/ (Accessed 3/2/15).	Healthcare Financial Management Association 32 Westbrook Corporate Center, Suite 600700 Westchester, IL 60154 Phone: 800-252-4362, 708-531-9600 Fax: 708-531-0032 www.hfma.org

Type of Association	Name	Description	Citation	Contact Information
Independent Nonprofit Association	Institute of Business Appraisers (IBA)	Established in 1978, the IBA is the oldest professional society devoted solely to the appraisal of closely held businesses.	"Company Profile" The Institute of Business Appraisers, http://www.go-iba.org/aboutus.aspx (Accessed 3/2/15).	The Institute of Business Appraisers 5217 South State Street, Suite 400 Salt Lake City, UT 84107 Phone: 800-353-4130 Fax: 866-353-5406 E-mail: hgiba@go-iba.org www.go-iba.org
Professional Association	Medical Group Management Association (MGMA)	MGMA strives to improve the performance of medical group practice organizations and the professionals they employ through the American College of Medical Practice Executives, the standard-setting certification division of the MGMA.	"About the MGMA" Medical Group Management Association, mgma.com/about/about/about-mgma/about-medical-practice-management (Accessed 3/4/15).	Medical Group Management Association 104 Inverness Terrace East Englewood, CO 80112 Phone: 303-799-1111 Toll Free Phone: 877-ASK-MGMA, (877-275-6462) E-mail: support@mgma.com www.mgma.com
Consulting Company	MGMA Healthcare Consulting Group (MGMA HGC)	Associated with the MGMA, the MGMA HCG provides consulting services to healthcare professionals and organizations.	"Contact Us" Medical Group Management Association, www.mgma.com/about/about-mgma/contact-mgma about/default.aspx?id=74 (Accessed 3/4/15).	Medical Group Management Association 104 Inverness Terrace East Englewood, CO 80112 Phone: 303-799-1111 Toll Free Phone: 877-ASK-MGMA, (877-275-6462) E-mail: support@mgma.com www.mgma.com
Professional Association	National Association of Certified Valuation Analysts (NACVA)	"NACVA's Mission is to provide resources to members and to enhance their status, credentials, and esteem in the field of performing valuations, financial forensics, and other related advisory services. To further this purpose, NACVA will advance these services as an art and science, establish standards for membership in the Association, provide professional education and research, foster practice development, advance ethical and professional practices, enhance public awareness of the Association and its members, and promote working relationships with other professional organizations."	"The Association" National Association of Certified Valuation Analysts, 2008, www.nacva.com/PDF/association_brochure.pdf (Accessed 10/12/09), p. 4.	National Association of Certified Valuation Analysts 1111 Brickyard Road, Suite 200 Salt Lake City, UT 84106 Phone: 801-486-0600 Fax: 801-486-7500 E-mail: nacva1@nacva.com www.nacva.com

Chapter 2

Benchmarking



The fruit of healing grows on the tree of understanding. Without diagnosis, there is no rational treatment. Examination comes first, then judgment, and then one can give help.

Carl Gerhardt, 1873

KEY TERMS

Activity Ratio
Benchmarking
Benchmarking to Industry Norms
Clinical Benchmarking
Clinical Quality Indicators
Collaborative Benchmarking
Competitive Benchmarking
Competitor Benchmarking
Disease-Specific Indicators
Economic Benchmarking
External Benchmarking
Financial Benchmarking
Financial Ratio Analysis
Functional Benchmarking
Functional Indicators
General Research
Generic Benchmarking
Generic Indicators
Global Benchmarking
Historical Subject Benchmarking
Industry Benchmarking
Institutional Quality Indicators
Internal Benchmarking
Leverage Ratio
Liquidity Ratio
Operational Benchmarking
Performance Benchmarking
Process Benchmarking
Profitability
Service Quality Indicators
Specific Research
Strategic Benchmarking
The Joint Commission

Key Concept	Definition	Citation	Concept Mentioned on Page #
Generations of Benchmarking	The idea that benchmarking is a developing science and types of benchmarking were redefined over the years based on shifts in industry and the gradual progression and recognition of best practices. The five generations of benchmarking are: (1) reverse engineering, (2) competitive benchmarking, (3) process benchmarking, (4) strategic benchmarking, and (5) global benchmarking.	"Strategic Benchmarking: How to Rate Your Company's Performance Against the World's Best," by Gregory H. Watson, John Wiley & Sons, Inc., 1993, p. 5–8.	57
Common Sizing	"Common size ratios are used to compare financial statements of different-size companies, or of the same company over different periods." This provides insight into how different companies compare.	"Common Size Financial Statements", by NetMBA.com (2007), www.netmba.com/ finance/statements/common-size/ (Accessed 8/ 13/2009).	57
Clinical Resource Utilization	A subset of clinical benchmarking concerned with the amount of resources used by a healthcare entity and the impact of resource use on quality of care.	"Financial and Clinical Benchmarking: The Strategic Use of Data," by HFMA, HCIA, Inc., 1997, p. 58.	62

OVERVIEW

Although many elements contribute to the success or failure of a healthcare professional practice, the most significant is the practice's ability to adapt within the rapidly changing healthcare marketplace. Management entities that respond to market changes efficiently and effectively may find that timely and informed decision-making can facilitate the temperate acclimation of their practices. These informed decisions are bolstered by two types of research: general and specific.[1] *General research* is not specifically related to the organization, practice, business, or enterprise of interest and may be comprised of such elements as economic conditions, demographics, compensation trends, transactions, and industry-specific trends. *Specific research* concerns only the organization of interest and typically is obtained from that organization. General research is gathered to provide a perspective for evaluating the specific data using a number of metrics, which may include *benchmarking* or *benchmark comparisons,* which is, "a technique or a tool for performance improvement and good quality practice by striving to be the best."[2]

HISTORY OF BENCHMARKING IN HEALTHCARE

Benchmarking was first employed by Xerox in 1979 as a method of finding and implementing best practices in order to identify and achieve new goals and pursue a policy of continuous improvement. Benchmarking techniques have been adopted by various industry sectors, including healthcare, and are generally used to compare business processes, products, or both against the "best" reported industry standards. Since the 1990s, projected trends have suggested continued growth in the use of benchmarking strategies by healthcare organizations.[3] For

1 See also Chapter 4: *Financial Valuation of Enterprises, Assets, and Services*.
2 "Benchmarking: A General Reading for Management Practitioners" By Sik Wah Fong et al., Management Decision, Vol. 36, No. 6, 1998, p. 407.
3 "An Introduction to Benchmarking in Health Care" By Harold R. Benson, Radiology Management, Vol. 16, No. 4, 1994, p. 35.

healthcare entities, many benchmarking methods have been tailored to provide practices with a foundation for quality improvement and *total quality management* (TQM), which will be discussed in more detail in this chapter.[4] The use of benchmarking to enhance the quality and efficiency of business processes and outcomes is expected to continue to increase with the twin goals of decreasing spending and improving quality.[5]

It is important to recognize that healthcare expenditures in the United States are notoriously high compared to other developed nations and that healthcare costs are continuing to grow, albeit at a slower pace.[6] The Centers for Medicare and Medicaid Services (CMS) has projected that *national health expenditures* (NHEs), which grew at an estimated 3.6 percent rate in 2013, is expected to increase by 5.7 percent annually through 2023.[7] Traditionally, healthcare spending has been largely attributed to the cost of personal healthcare, such as hospital costs and payment for professional services (for example, physician or clinical services).[8] The continuous growth of NHE in recent decades has prompted the introduction of several cost reduction initiatives, for example, managed care and prospective payment systems, in an effort to curb the amount of money spent on healthcare each year.[9] Anticipating a continued rise in healthcare spending during the next decade, CMS suggested drastic cuts to physician payments in its proposed 2015 physician fee schedule in an effort to contain healthcare expenditures to a sustainable target amount.[10] Physicians are expected to receive a 21.2 percent reduction in payments for services furnished after March 31, 2015, which can only be averted through Congressional legislation.[11] Despite these reductions, the administration of President Barack Obama feels that healthcare reform will both reduce cost as well as improve healthcare quality and efficiency through pay-for-performance programs, improved primary care coordination, and other payment reforms.[12] Therefore, the healthcare industry must rely on benchmarking techniques to reach these goals within the confines of a "sustainable" budget.

The following sections will provide a brief overview of the benchmarking process as it applies to the healthcare industry, including an introduction to the generally accepted types of benchmarking (*Types of Benchmarking*) and the benchmarking process (*The Benchmarking Process*). Subsequent sections will provide a more detailed look at the theory and application of some benchmarking types (for example, operational, financial, clinical, and economic benchmarking) that may be of specific use for the valuation of healthcare professional practices.

4 Ibid, p. 36.
5 Ibid, p. 35.
6 "Health Care Costs: Key Information on Health Care Costs and Their Impact" Kaiser Family Foundation, May 2012, https://kaiserfamily foundation.files.wordpress.com/2013/01/7670-03.pdf (Accessed 3/20/15) p. 4, 7.
7 "National Health Expenditure Projections 2013-2023: Forecast Summary" Centers for Medicare and Medicaid Services, 2013, http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/Proj2013.pdf (Accessed 3/20/15).
8 "Health Care Costs: Key Information on Health Care Costs and Their Impact" Kaiser Family Foundation, May 2012, https://kaiserfamily foundation.files.wordpress.com/2013/01/7670-03.pdf (Accessed 3/20/15) p. 10.
9 "An Introduction to Benchmarking in Health Care" By Harold R. Benson, Radiology Management, Vol. 16, No. 4, 1994, p. 35.
10 "Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule, Clinical Laboratory Fee Schedule, Access to Identifiable Data for the Center for Medicare and Medicaid Innovation Models & Other Revisions to Part B for CY 2015; Final Rule" Federal Register, Vol. 79, No. 219, November 13, 2014, p. 67734.
11 Ibid, p. 67742.
12 "Reducing Costs and Improving the Quality of Health Care" The White House, Economic Report of the President, 2013 Edition, Washington, D.C.: U.S. Government Printing Office, March 2013, p. 161.

PURPOSE OF BENCHMARKING

Financial operations are a significant source of risk for many healthcare enterprises. When comparing the subject enterprise to industry norms, the adviser should grant careful consideration to both the financial performance and economic condition of the subject enterprise.

In the current evolving regulatory, reimbursement, and competitive environments, there exist multiple elements that determine the relative attributes of success or failure of a healthcare enterprise. Paramount among those elements is the extent to which the subject entity's management is capable of making timely, informed decisions regarding the strategic operation and financial performance of the organization. *Benchmarking* is among the most useful management tools available to achieve this objective and is a well-established and long accepted method of financial analysis that can aid managers, and their professional advisors, in promoting a comprehensive understanding of the operating performance and financial status of their healthcare enterprise.

Benchmarking techniques can also be utilized to illustrate the degree to which an enterprise varies from comparable healthcare industry norms, as well as to provide vital information regarding trends in the internal operational performance and financial status of the subject enterprise. The successful application of benchmarking will generally reveal both favorable and unfavorable areas of a business' operations, which may then require further examination to determine causality and planning for their remediation. Through this process, benchmarking often assists not only in the identification of anomalous performance, but also in revealing their underlying causes. Once the factors responsible for the performance deviating from the norm are determined, they should be can be further researched to assess the potential weaknesses and risk factors (as well as the potential benefits) they may pose for the enterprise going forward.

The benchmarking process can also be a powerful tool for advisers providing valuation services. Benchmarking can provide a guide in developing expectations regarding the future financial performance of a subject enterprise and can provide a *smell test* regarding the valuation results arrived at through the application of the various valuation approaches, methods, and techniques.

Healthcare advisors, in providing valuation or financial feasibility services, often use benchmarking to help assess the subject entity specific (non-systematic) risk of an enterprise by comparing its relative strengths and weaknesses to normative financial performance data derived from the financial performance of similar entities within its particular industry. Common methods of applying benchmarking analyses to the valuation or financial feasibility process may include:

(1) Adjustment of historical operating expenses as well as historical capital structure to approximate industry norms;
(2) Adjustment of the discount rate or cost of equity for the enterprise, calculated utilizing market data sources (subject entity specific risk premium);

(3) Selection of the appropriate financial multiples or ratios to utilize for comparison and/or valuation purposes (e.g., price/earnings, price/revenue, price/EBITDA); and
(4) Selection and quantification of applicable discounts and premiums (e.g., discount for lack of marketability, control premium, minority discount).

Prior to performing a benchmark analysis, it is useful for the valuation analyst to *common size* the data in order to account for inter-temporal differences in scope and scale that may skew the calculated results.[13] *Common size* refers to expressing the historical financial metrics as a percentage or ratio of some aggregate measure. Methods of common-sizing include expressing items on income and expense statements in terms of:

(1) Percentage of revenue;
(2) Per unit produced – e.g., Relative Value Unit;
(3) Per Provider – e.g., physician;
(4) Per capacity measurement – e.g., per square foot; or
(5) Other standard units of comparison.

Successful financial and operational benchmarking can be divided into two categories:

(1) Internal Subject Entity Benchmarking; and
(2) External Benchmarking.

INTERNAL BENCHMARKING

Throughout the 1980s and 1990s, several different benchmarking models evolved. The concept of "*generations of benchmarking*," proposed by Gregory Watson (1993), illustrates benchmarking as a developing science; types of benchmarking were redefined over the years based on shifts in industry and the gradual progression and recognition of best practices.[14] Some of the first benchmarking types and categories were formerly introduced by Robert C. Camp in the late 1980s, and they are still widely respected.[15] However, over the years, several different classification schemes for benchmarking have been developed, some more complex than others. G. Anand and Rambabu Kodali (2008) provide an extensive listing of classification schemes and benchmarking types that have been introduced to formal literature over the years.[16] Despite the lack of consensus regarding a universal classification scheme, benchmarking models can most easily be distinguished as subgroups identified by (1) *who* is being compared against, (2) *what* they are meant to benchmark, and (3) the *purpose* for the relationship between the entities being compared.[17] Sik Wah Fong, Eddie W.L. Cheng, and Danny C.K. Ho (1998) were responsible for the first classification scheme based on these three broadly defined categories.[18]

13 "Common Size Financial Statements", NetMBA.com, 2007, http://www.netmba.com/finance/statements/common-size/ (Accessed 8/13/2009).
14 "Strategic Benchmarking: How to Rate Your Company's Performance Against the World's Best" By Gregory H. Watson, New York, NY: John Wiley & Sons, Inc., 1993, p. 6.
15 "Benchmarking Applied to Health Care" By Robert C. Camp and Arthur G. Tweet, Journal of Quality Improvement, Vol. 20, No. 5, May 1994, p. 229-231.
16 "Benchmarking the Benchmarking Models" By G. Anand and Rambabu Kodali, Benchmarking: An International Journal, Vol. 15, No. 3, 2008, p. 262-265.
17 "Benchmarking: A General Reading for Management Practitioners" By Sik Wah Fong et al., Management Decision, Vol. 36, No. 6, 1998, p. 410.
18 Ibid, p. 409-410.

Internal Subject Entity Benchmarking

Internal subject entity benchmarking compares the performance of an enterprise or property during the current or most recently reported time period to its performance in the past, a process which involves normalizing the subject entity's historical operating performance, financial status data, and information, and the comparison of the past data with the current period data. Adjustment of past data may be necessary to create a common basis upon which to make comparisons and avoid the complications of changing accounting/reporting measurement and the anomalous results that have arisen over time within the entity, e.g., the existence of extraordinary and nonrecurring events. *Internal subject entity benchmarkin*g examines the performance over time of the subject entity with the intention of identifying performance changes within the entity and providing a foundation for the projection of future performance going forward. Based upon the *Principle of Induction's* premise that the future is likely to be similar to the recent past, *internal subject entity benchmarking* can assist the adviser, from a risk perspective, by highlighting changes, both negative and beneficial, in the historical and current operations of the subject entity and suggesting which of those trends require further investigation in determining the probability of the continuity of the observed performance results.

External Benchmarking

The following four types of external benchmarking are based on *whom* an organization decides to compare processes or products with; they are used to define the general process of benchmarking,[19]as it is outlined in this chapter. The four types of *external benchmarking* include

(1) **Competitor benchmarking** (analogous to what Robert C. Camp refers to as "*competitive benchmarking*") is a type of external benchmarking used for comparing work processes with those of that industry's best competitor to determine new target performance levels.[20] This method allows an organization to develop a clear understanding of its direct competition and to compare its own processes to industry best practices.

(2) **Industry benchmarking** is a type of external benchmarking process used to compare an organization with its competitors, but it differs from competitive benchmarking in that it utilizes both direct competitors as well as its industry non-competitors.

(3) **Generic benchmarking**, also known as *generic process benchmarking* or *best-in-class benchmarking*, was developed as a byproduct of TQM processes. This type of benchmarking focuses on the identification and comparison of key business processes to those of the leading competitor(s). Due to the nonspecific nature of many of these processes, generic benchmarking may be conducted with comparative organizations regardless of industry or market differences.[21]

(4) **Global benchmarking** is a more recent phenomenon that expands the boundaries of who can constitute a comparison organization and is based on geographic location. As with any form of external benchmarking, but more noticeably so in global benchmarking, cultural and definition differences must be taken into account.

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19 See *The Benchmarking Process* section below.

20 "Benchmarking Applied to Health Care" By Robert C. Camp and Arthur G. Tweet, Journal of Quality Improvement, Vol. 20, No. 5, May 1994, p. 231.

21 "Benchmarking Applied to Health Care" By Robert C. Camp and Arthur G. Tweet, Journal of Quality Improvement, Vol. 20, No. 5, May 1994, p. 231; "Industrial Benchmarking for Competitive Advantage" By Bjørn Andersen, Human Systems Management, Vol. 18, Nos. 3-4, 1999, p. 288.

In addition to the five basic types of benchmarking based on *who* the subject entity is being compared to, benchmarking also may be classified based on *what* elements are being compared, including the following four classifications:

(1) **Process benchmarking** focuses on the identification of particular key business processes or operational characteristics that require improvement. This relies on the establishment of some *standard of performance* in that the metrics utilized for this type of benchmarking do not necessarily include outcomes, but rather the underlying functional and procedural traits of an organization that can affect outcomes.[22]
(2) **Functional benchmarking** is related to process benchmarking and is used to compare two or more organizations via comparison of specific business functions.[23] Similar to generic benchmarking, functional benchmarking does not require comparison organizations to be direct competitors, nor are they necessarily within the same industry.[24]
(3) **Performance benchmarking** utilizes outcome or output characteristics as benchmarking metrics (for example, price, speed, and reliability) in contrast to process benchmarking.[25]
(4) **Strategic benchmarking** is based on the same concept as process benchmarking and is a form of external benchmarking dependent upon identification of characteristics underlying the observed successful (or unsuccessful) outcomes. However, strategic benchmarking compares the strategies and decisions that precede business performance instead of focusing on specific processes. Results of this type of benchmarking can dramatically change downstream business processes, as opposed to slight alterations to a specific operation.[26]

Fong et al. classifies two additional types of benchmarking based on the *purpose* for analyzing the relationship between the two entities of comparison:

(1) **Competitive benchmarking**, not to be confused with competitor benchmarking, is used for the purpose of gaining a measurable advantage over others (that is, competitors).[27]
(2) **Collaborative benchmarking** is benchmarking for the development of an atmosphere that facilitates learning and the sharing of knowledge.[28] This type of benchmarking appeals to healthcare organizations for the support it lends to the ideals of collaboration, mutual benefit, and continuous improvement for all partners.[29]

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22 "How Process Benchmarking Supports Corporate Strategy" By Gregory H. Watson, Strategy & Leadership, Vol. 21, No. 1, January/February 1993, p. 13; "Beyond Outcomes: Benchmarking in Behavioral Healthcare" By Paul M. Lefkovitz, Behavioral Healthcare Tomorrow, February 2004, p. 34.
23 "Benchmarking: A General Reading for Management Practitioners" By Sik Wah Fong et al., Management Decision, Vol. 36, No. 6, 1998, p. 410.
24 "Benchmarking Applied to Health Care" By Robert C. Camp and Arthur G. Tweet, Journal of Quality Improvement, Vol. 20, No. 5, May 1994, p. 231; "Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance" By Robert C. Camp, Milwaukee, WI: ASQC Quality Press, 1989, p. 63.
25 "Benchmarking: A General Reading for Management Practitioners" By Sik Wah Fong et al., Management Decision, Vol. 36, No. 6, 1998, p. 410; "Industrial Benchmarking for Competitive Advantage" By Bjørn Andersen, Human Systems Management, Vol. 18, Nos. 3-4, 1999, p. 288.
26 "Benchmarking the Management of Projects: A Review of Current Thinking" By Elizabeth Barber, International Journal of Project Management, Vol. 22, No. 4, 2004, p. 303; "Strategic Benchmarking: How to Rate Your Company's Performance Against the World's Best" By Gregory H. Watson, New York, NY: John Wiley & Sons, Inc., 1993, p. 8.
27 "Benchmarking: A General Reading for Management Practitioners" By Sik Wah Fong et al., Management Decision, Vol. 36, No. 6, 1998, p. 410-411.
28 Ibid.
29 "Collaborative Benchmarking in Health Care" By Doug Mosel and Bob Gift, Journal on Quality Improvement, Vol. 20, No. 5, May 1994, p. 242.

It is helpful to know the generally accepted basic benchmarking types because much overlap often exists between different types of benchmarking due to the nature of the process and the lack of universal classification schemes for benchmarking types.[30] In practice, it is often found that the combination of two or more generic types of benchmarking can be beneficial, for example, the combination of functional or generic benchmarking with process benchmarking,[31] and, accordingly, it is important to have an understanding of the fundamental benchmarking types.

> In practice, it is often found that the combination of two or more generic types of benchmarking can be beneficial.
>
> ***Bjørn Andersen, 1999.***

In addition to the generic types of benchmarking described previously, there exist several types not mentioned in this *Guide*, many of which were created for industry-specific purposes. In particular, four additional types of benchmarking may be used to represent benchmarking applications that are of specific significance within the healthcare industry: (1) operational, (2) financial, (3) economic, and (4) clinical. Each model has a unique application within the healthcare industry and will be discussed in further detail in subsequent sections.

Benchmarking to Industry Norms

Benchmarking to industry norms compares data from the subject enterprise to normative survey data from other enterprises within the same industry sector and/or sub-sector.[32] This method of benchmarking provides the basis for the comparison of the *operational performance* and *financial condition* of the subject entity, to that of similar entities, for the purpose of identifying its relative *strengths*, *weaknesses*, and *related measures of investment risk*.

The process of *benchmarking* against industry averages or norms will typically involve the following steps:

(1) *Identification* and *selection* of appropriate surveys to use as benchmarks, i.e., to compare with data from the *subject entity* of interest. This involves, in part, answering the question, "*In which survey would this organization most likely be included?*";
(2) If appropriate, *re-categorization* and *adjustment* of the subject entity's *revenue* and *expense* accounts to optimize data compatibility with the selected survey's structure and definitions (e.g., common sizing); and
(3) *Calculation* and *articulation* of observed differences of the subject entity from the industry averages and norms, expressed either in terms of variance in ratio, dollar unit amounts, or percentages of variation.

30 "Benchmarking the Benchmarking Models" By G. Anand and Rambabu Kodali, Benchmarking: An International Journal, Vol. 15, No. 3, 2008, p. 260, 262-265.
31 "Industrial Benchmarking for Competitive Advantage" By Bjørn Andersen, Human Systems Management, Vol. 18, Nos. 3-4, 1999, p. 289.
32 "Benchmarking: A General Reading for Management Practitioners" By Sik Wah Fong et al., Management Decision, Vol. 36, No. 6, 1998, p. 410-411.

The comparison of these metrics reflects, through both internal and external benchmarking, the *relative efficiency* of the subject entity to its own historical performance, as well as its performance relative to the industry sub-sector in which it operates. Several of the metrics that may be utilized in the *benchmarking process* are described in the following sections.

Clinical Benchmarking Metrics

Clinical benchmarking addresses several aspects of clinical care, including:

(1) the continuous development and maintenance of quality health care;
(2) how best practices supports the attainment of targeted patient-focused outcomes;
(3) the compilation of all generally accepted evidenced-based benchmarks for best practices;
(4) evaluating the involvement of practitioners and multidisciplinary effort across levels of care in benchmarking activities; and
(5) the dissemination of best practices.[33]

In employing clinical benchmarking techniques, a given organization is aiming to:

(1) improve the quality of clinical care and patient outcomes;
(2) obtain and/or maintain a particular standard of excellence; or
(3) increase the number of practices or processes that are founded in *evidence-based practice*.[34]

Successful clinical benchmarking often results in the adoption and continued utilization of a *best practice* approach to management, as well as the *innovative progression* of practices aimed at improving patient outcomes and quality of care. Both the quantity, as well as the quality of the data required to perform a clinical benchmark analysis will be directly related to the practitioner's effort in collecting the relevant information. Thus, practitioner's buy-in to the benchmarking process is a key step in implementing a benchmark analysis approach.[35]

In light of the dynamic evolving environment surrounding the movement from traditional *fee-for-service* to *value-based reimbursement* (VBR), the adviser should investigate the healthcare enterprise as to the status of their efforts to conform with this new paradigm and the possible impacts of the healthcare enterprise's *qualitative value drivers*, e.g., *depth of management*, that might provide support for the subject entity's ability to survive and prosper in the new *quality/value-driven* reimbursement environment.

While the specific metrics employed may differ, the practices utilized in performing a c*linical benchmarking analysis* are typically similar to those utilized for industry *financial benchmarking*. As always, the applicability of a given metric is dependent upon the *needs of the organization*; the *fit of the proposed benchmarking metric* to those needs; and the *risks* attendant to: (1) the utilization of the selected benchmark metric (i.e. implicit and explicit costs) and

33 "Sharing the Evidence: Clinical Practice Benchmarking to Improve Continuously the Quality of Care", by Judith Ellis, Journal of Advanced Nursing, Vol. 32, No. 1, 2000, p. 216.
34 Ibid, p. 216-218.
35 "Sharing the Evidence: Clinical Practice Benchmarking to Improve Continuously the Quality of Care", by Judith Ellis, Journal of Advanced Nursing, Vol. 32, No. 1, 2000, p. 220.

(2) the *misinterpretation* of result, which may be lead to a *diminution of management's credibility* among the practitioners.[36] A few of the more commonly used benchmarking indicators, e.g., *clinical resource utilization* and types of *quality indicators*, are discussed in more detail in the following sections.

Measuring Clinical Resource Utilization

The increasing importance of *clinical resource utilization* is evidenced by the acceleration in the implementation of healthcare quality initiatives, which include concerns related to the volume of resources consumed by a healthcare entity and the impact of *resource utilization practices* on patient outcomes and quality of care.[37] Current and proposed legislation regarding physician payments, e.g., *value-based purchasing initiatives*, are also reflective of the importance of measuring and benchmarking utilization rates.[38] For example, Section 3001(a) of the Affordable Care Act created the Hospital Value-Based Purchasing Program to provide incentive payments to hospitals that satisfy quality performance standards in the hospital inpatient setting.[39] Similarly, the *American Taxpayer Relief Act* mandated that CMS assume a utilization rate of 90 percent for imaging equipment that costs more than $1 million.[40] Comparatively, CMS assumes a utilization rate of 50 percent for most equipment (i.e. the equipment is in use 50 percent of the time the provider is open for business).[41] With this higher utilization rate, imaging services receive less reimbursement per use of the equipment.

For hospital inpatient procedures, helpful tools in developing benchmarks for utilization rates are *Diagnostic Related Groups (DRGs)*, which may be collected from standard claim forms for physician reimbursement.[42] Additionally, because submission of DRGs is regulated by the *Health Care Industry Association's (HCIA) International Classification of Clinical Services (ICCS)* coding system, hospital-specific codes are converted to a universal system, standardizing patient-level data across hospitals allowing for easy comparison.[43] Useful benchmarking indicators for measuring clinical resource utilization also include average:

(1) *length of stay (ALOS or LOS)*;
(2) *pharmaceutical units* or *pharmacy cost*;
(3) *laboratory units/cost*;
(4) *imaging units/cost*; and

36 The challenges associated with benchmarking includes: who establishes the benchmark; how the data is reported; and does the data take into account statistical noise that may be seen as distorting the credibility of the message delivered. "How Can We Make More Progress In Measuring Physician's Performance to Improve The Value of Care" By Thomas P. Miller et al., Health Affairs, Vol. 28, No. 5, September/ October 2009, p. 1431.

37 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association, HCIA, Inc., Westchester, Illinois: Healthcare Financial Management Association, 1997, p. 58.

38 "Patient Protection and Affordable Care Act" Pub. L. 111-148, § 3001(a), 124 Stat. 353 (March 23, 2010).

39 Ibid.

40 "Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule, Clinical Laboratory Fee Schedule & Other Revisions to Part B for CY 2014; Final Rule" Federal Register Vol. 78, No. 237, p. 74238-74239 (December 10, 2013); "Equipment Utilization Rate Changes Adversely Affect Patients and Radiologists" American College of Radiologists, 2013, http://www.acr.org/ ~/media/ACR/Documents/PDF/Advocacy/Fed%20Relations/EquipmentUtilizationAssumptionRateIssueBrief.pdf (Accessed 11/12/2014).

41 "Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule, Clinical Laboratory Fee Schedule, Access to Identifiable Data for the Center for Medicare and Medicaid Innovation Models & Other Revisions to Part B for CY 2015; Proposed Rule" Federal Register Vol. 79, No. 133, p. 40327 (July 11, 2014).

42 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association, HCIA, Inc., Westchester, Illinois: Healthcare Financial Management Association, 1997, p. 58.

43 Ibid, p. 61.

(5) *average routine charges*, e.g., room and board costs per case/day, total ancillary costs, operating room costs, anesthesia costs, and medical/surgical supply costs, which are often designated as ratios (i.e., per case or per day).[44]

Measuring Quality

In recent decades, practitioners have voiced concerns regarding the ability of healthcare enterprises to meet the healthcare reform initiative's dual mandate of reducing expenditures and increasing quality.[45] The balancing of patient, provider, and payor interests along with an increased focus on improving quality of care while, at the same time, decreasing healthcare costs and expenditures threatens to pose an almost intractable challenge. Selecting metrics to quantify the quality of care is perceived as problematic due, in part, to the variability patient's and provider's perceptions of the concept of *quality*. This lack of standardization has led to a variety of conflicting methods to establish accepted healthcare *quality metrics*. Three general categories of quality indicators have, thus far, been established: (1) *institutional quality indicators*; (2) *service quality indicators*; and (3) *clinical quality indicators*.

Adherence to regulatory standards set by accreditation agencies, associations, and other regulatory bodies can be utilized to form the foundation of *institutional quality indicators*.[46] Although institutional quality has traditionally been determined by measuring patient outcomes, several organizations utilize measures of compliance that quantify adherence to regulatory measures as an alternative measure.[47] Often minimum compliance standards are set and enforced by third party and government oversight agencies, which require specific adherence rates to achieve mandatory quality targets. Examples of these agencies include: (1) the *Joint Commission*; (2) the *College of American Pathologists (CAP)* for laboratory operations; (3) the *Occupational Safety and Health Administration (OSHA)* for workplace safety; and (4) the *National Council for Quality Assessment (NCQA)*, which measures quality of health plans.[48]

Another quality-centered metric often required by oversight agencies are *hospital scorecards*, which may be used to measure a range of performance indicators from *clinical outcomes* of various specialties (e.g., Obstetrics: Cesarean delivery rate and post-delivery complication rate) to *hospital throughput data* (e.g. number of cases, ALOS, etc.).[49] This data, once collected, can then be used in a variety of ways at the discretion of the provider, e.g., as the foundation of a consumer marketing plan, or to obtain additional and/or more favorable Health Maintenance Organization (HMO) contracts.[50]

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44 Ibid, p. 60.

45 "How Can We Make More Progress In Measuring Physician's Performance to Improve The Value of Care" By Thomas P. Miller et al., Health Affairs, Vol. 28, No. 5, September/October 2009, p. 1431.

46 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association, HCIA, Inc., Westchester, Illinois: Healthcare Financial Management Association, 1997, p. 47.

47 Ibid.

48 "Benefits of Joint Commission Accreditation" The Joint Commission, August 21, 2014, http://www.jointcommission.org/accreditation/accreditation_main.aspx (Accessed 3/12/15); "2009 Programs and Initiatives Case Statement" National Committee for Quality Assurance, April 2009, http://www.ncqa.org/Portals/0/Sponsor/2009_Case_Statement.pdf (Accessed 2/10/10); "Laboratory Accreditation Program" College of American Pathologists, 2015, http://www.cap.org/web/home/lab/accreditation/laboratory-accreditation-program?_afrLoop=76371699054611#%40%3F_afrLoop%3D76371699054611%26_adf.ctrl-state%3Dprnp8fobd_109 (Accessed 3/20/15); "All About OSHA" Occupational Safety and Health Administration, U.S. Department of Labor, 2014, https://www.osha.gov/Publications/all_about_OSHA.pdf (Accessed 3/20/15).

49 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association, HCIA, Inc., Westchester, Illinois: Healthcare Financial Management Association, 1997, p. 49.

50 Ibid, p. 49-50.

Service quality indicators measure *patient satisfaction* regarding the healthcare services they have received from providers.[51] While this may seem to be the most direct method to gauge performance and the success of an organization's customer service goals, results from patient survey should be weighed against the variability of the respondent's perceptions of *quality*. In addition, surveys, particularly voluntary surveys, are prone to *selection bias*, as those patients who perceive the service to be out of conformance with their expectations may, at an increased rate, complete surveys, thereby skewing the survey results. The comparison of quality data across organization may also be plagued by the lack of standardization with regard to quality metrics. These issues may be mitigated as *value based* reimbursement continues to grow in popularity and as third party payors seek a legitimate, objective, and comparable measure of patient satisfaction. While regular assessment of *patient satisfaction* may be useful to the management of a healthcare enterprise in improving long-term quality outcomes, it is often impractical as a short-term or immediate outcome measure due to the delay between the collection of the survey data and implementation of the desired changes.[52]

Clinical Quality Indicators can be grouped in to three general classifications:

(1) *Generic indicators*, e.g., morbidity and mortality or readmission, which are measures based on a rate of occurrence within the patient population;
(2) *Disease-specific indicators,* which are used to classify patients with regard to either a specific diagnosis or procedure (with varying degrees of specificity), e.g., the number of patients undergoing an elective surgery; and
(3) *Functional indicators,* which are outcomes used as a proxy for patient quality of life or overall population health and may include, for example, patient functional performance following a procedure.[53]

The measurement of *output quality* through *clinical quality indicators* is accomplished through the determination of whether the applicable quality standard was met in the provision of the clinical care or treatment.[54] With the advent of healthcare reform and *accountable care*, the continued ability of healthcare enterprises to generate revenue going forward will be increasingly tied to the healthcare enterprises ability to collect, report, and achieve minimum standards related to the clinical and quality measures discussed above.

Ratio Analysis

An illustration of the various aspects of *operational performance* and *financial condition* for a subject enterprise can be derived from a f*inancial ratio analysis*. These ratios are evaluated in terms of their comparison to generally established industry and industry subsector norms, for example, a *current ratio* (as described below) of below 1.0 for an enterprise might suggest that the enterprise may have inadequate resources to meet current obligations; however, facts and circumstances particular to the industry, which may obviate a *rule of thumb*, should also be

51 Ibid, p. 50.
52 Ibid, p. 50.
53 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association, HCIA, Inc., Westchester, Illinois: Healthcare Financial Management Association, 1997, p. 57.
54 "The Guide to Benchmarking in Healthcare: Practical Lessons from the field", by Arthur G. Tweet and Karol Gavin-Marciano, Quality Resources, 1998, p. 25.

considered, necessitating a comparison to ratios derived from survey data of comparable industry sub-sector participants.

Common types of financial indicators that are measured by ratio analysis include:

(1) *Liquidity ratios, which* measure the ability of an organization to meet cash obligations as they become due, i.e., to support operational goals. Ratios above the industry mean generally indicate that the organization is in an advantageous position to better support immediate goals.
(2) The *current ratio*, which quantifies the relationship between current assets and current liabilities, is an indicator of an organization's ability to meet short-term obligations. Managers use this measure to determine how quickly assets are converted into cash.
(3) *Activity ratios*, also called *efficiency ratios*, indicate how efficiently the organization utilizes its resources or assets, including cash, accounts receivable, salaries, inventory, property, plant, and equipment. Lower ratios may indicate an inefficient use of resources and assets.
(4) *Leverage ratios*, measured as the ratio of long-term debt to net fixed assets, are used to illustrate the proportion of funds or capital provided by shareholders (owners) and creditors to aid analysts in assessing the appropriateness of an organization's current level of debt. When this ratio falls equal to or below the industry norm, the organization is typically not considered to be at significant risk.
(5) *Profitability*, which indicates the overall net effect of managerial efficiency of the enterprise. To determine the profitability of the enterprise for benchmarking purposes, the analyst should first review and make adjustments to the owner(s) compensation, if appropriate. Adjustments for the market value of the *replacement cost* of the professional services provided by the owner are particularly important in the valuation of professional medical practices for the purpose of arriving at an *economic level* of profit.

Figure 2-1: *Commonly Utilized Financial Ratios*, below, displays some of the commonly utilized ratios in each of the above categories:

Figure 2-1: Commonly Utilized Financial Ratios

Commonly Utilized Financial Ratios

Ratio	Formula
Profitability Ratios	
Operating Profit Margin	$\frac{\text{Operating Profit}}{\text{Net Revenue}}$
EBITDA Margin	$\frac{EBITDA}{\text{Net Revenue}}$
Liquidity Ratios	
Current Ratio	$\frac{\text{Total Current Assets}}{\text{Total Current Liabilities}}$
Working Capital to Revenue	$\frac{\text{Working Capital}}{\text{Net Revenue}}$
Working Capital (excluding current portion of Interest Bearing Debt) to Revenue	$\frac{\text{Working Capital} - \text{Current Portion of Interest Bearing Debt}}{\text{Net Revenue}}$

(continued)

Activity Ratios	
Days in Accounts Receivable	$\frac{\text{Accounts Receivable}}{\frac{\text{Net Revenue}}{365}}$
Net Property & Equipment to Net Revenue	$\frac{\text{Property and Equipment (net)}}{\text{Net Revenue}}$
Total Asset Turnover	$\frac{\text{Net Revenue}}{\text{Total Assets}}$
Leverage Ratios	
Debt Ratio	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$
Interest Bearing Debt to Book Value of Total Capitalization	$\frac{\text{Interest Bearing Debt}}{\text{(Interest Bearing Debt + Net Worth/Equity)}}$
Interest Bearing Debt to Market Value of Total Capitalization	$\frac{\text{Interest Bearing Debt}}{\text{(Interest Bearing Debt + Market Value of Equity)}}$

The advisor should be aware that the above listed financial ratios are an illustrative subset of the possible financial indicators that may be employed by an enterprise and not an exhaustive list of those available. The selection of the appropriate ratio(s) for a particular enterprise to consider will be largely driven by the facts and circumstances specific to the operation of the subject enterprise, e.g., a key metric within the health insurance industry sub-sector is the *medical loss ratio,*[55] which is not likely to be applicable in other industry sub-sectors. The fullest, most robust, picture of the subject enterprise's *financial performance* and *economic status* in comparison with its industry subsector can be most effectively achieved through the inclusion of as many industry-specific *benchmarking metrics* as are available.

Of concern in developing a financial ratio analysis is the homogeneity of the available benchmarking data sample. Intra-organizational data from mature enterprises typically prove to be less variable across longer time horizons. However, the introduction of data from *external* enterprises for comparison purposes tends to introduce increased variability in the selected metrics through idiosyncratic measurement methodologies and procedures by different organizations. The use of a standard chart of accounts for a subject enterprise, or the recasting of the subject enterprise's historical financial data into an industry standard format that conforms with the organization of the selected benchmark sample data, can effectively mitigate these comparison issues and allow for an appropriate comparison of the subject enterprise's *operating performance* and *financial status* to *industry normative* survey data.

For the purposes of benchmarking, *healthcare industry normative* survey data of this type may be obtained from several sources, both publicly available and proprietary, enabling the adviser to compare detailed financial, operational, and clinical performance data to similar data collected from the subject enterprise's peers. Within the ever-changing healthcare environment, it is important to ensure that the selected survey data is as current as possible, and it should be noted that delays of a year or more in the publication of survey data are not uncommon. In the healthcare industry's rapidly changing reimbursement and regulatory environment, where year-

55 The Medical Loss Ratio is the relationship of medical insurance premiums paid out for claims. "Dictionary of Health Insurance and Managed Care" Edited by David Edward Marcinko and Hope Rachel Hetico, Springer Publishing Company, New York, 2006, p. 181.

to-year change may be significant and material, mismatching data from different years due to the delay in availability may result in shortcomings as to the efficacy and validity of the benchmark analysis and the valuation process.

ECONOMIC BENCHMARKING

Generally, market forces can be understood by utilizing a research technique referred to as *economic benchmarking*. More specifically, *economic benchmarking* is the comparison of *business operation efficiency* based on economic principles, or how operating efficiencies are impacted by the characteristics, or changes in the characteristics, of a particular market.[56] An economic benchmarking analysis can be utilized to:

(1) improve the average performance of a given entity within the marketplace;
(2) improve the performance of poorly-performing organizations; or
(3) reduce the gaps in performance between organizations.[57]

To some degree, the *patient base* and *earnings* of a healthcare enterprise are correlated with the demographic make up of the area in which the enterprise operates. For example, high population growth and turnover rates within the market service area for an enterprise may act in the short run to increase demand for the services provided by the enterprise; however, over the medium to long term the demographic makeup of the market service area may be perceived as attractive to new *competitive market entrant* medical practices.[58] The entrance of new competitors in a market place will tend, all other relevant factors remaining constant, to apply downward pressure on profit margins in response to supply and demand forces.

One particular demographic which may be relevant to healthcare enterprises in assessing utilization demand for certain medical specialties and sub-specialties is the age distribution of a given *market services area's* (MSA) potential patient population. The general trend, driven by the aging population of baby boomers, is toward increased demand for certain medical specialties, e.g., practitioners of cardiology, geriatric medicine, ophthalmology, and orthopedics. In contrast, a specific market service area that may be trending toward a younger population base will typically be more reliant on, and therefore raise the demand for, practitioners of pediatrics, obstetrics, family medicine, and neonatology.

Economic benchmarking is generally utilized to provide basic information as to where a given enterprise stands with regard to its *effectiveness* and/or *efficiency* within the competitive market service area in which it operates.[59] This information provides a foundation for further subject entity-specific analysis for the purpose of benchmarking the subject entity's relative riskiness as related to: (1) *operational* and *clinical performance*; (2) *financial status*; (3) *efficiency*; and (4) *function in the marketplace*.

56 "Economic Benchmarking and its Applications", by Virendra Ajodhia, Konstantin Petrov, and Gian Carlo Scarsi, KEMA Consultants, p. 1.
57 "In Search of a Benchmarking Theory for the Public Sector", G. Jan van Helden and Sandra Tillema, Financial Accountability & Management, Vol. 21, No. 3 (August 2005), p. 341.
58 "Research for Valuations: The Theory and Practice of Industry Data Gathering", by Anne P. Sharamitaro, NACVA, January 26, 2007, p. 29.
59 "In Search of a Benchmarking Theory for the Public Sector", by Jan van Helden and Sandra Tillema, Financial Accountability & Management, Vol. 2 No. 3 (August 2005), p. 339.

ECONOMIC BENCHMARKING INDICATORS AND SOURCES

There are a variety of national, regional, and local sources that provide some of the more common economic indicators, including: (1) *unemployment*; (2) *labor statistics*; (3) *inflation*; (4) *new housing starts*; (5) *household income*; (6) *inflation rates*; (7) *interest rates*; (8) *Gross National Product* (GNP); (9) the *Composite Index of Leading Economic Indicators*; (10) *return rates for government securities*; and (11) *financial market data and indexes*, among others.

ASSESSING RISK THROUGH THE 4 PILLARS

The culmination of the benchmarking process is the development of a risk assessment of the subject entity informed by the *internal, external*, and *economic* benchmark analyses described above. In developing the *assessment of risk*, the valuation analyst should also consider the subject entity's operation within the context of the *four pillars*, i.e., (1) *regulations*; (2) *reimbursement*; (3) *competition*; and (4) *technology,* as discussed below.

Regulatory Risk

Perhaps arising from dual trends of increasing *corporatization* of healthcare provision on one hand and the rapid expansion of *government financing* of the U.S. healthcare delivery system on the other, the regulatory environment in which healthcare enterprises and providers operate has become significantly more *complex* and *intense* in its *scrutiny*. Severe penalties, both civil and criminal, exist related to health care enterprises and their management, who enter into transactions and arrangements that may subsequently be found to be legally impermissible. With the passage of the 2010 Patient Protection and Affordable Care Act (ACA, also known as *Obamacare*), the government has adopted a cost reduction policy that seeks to eliminate fraud and abuse to help finance the reform initiative. Providers are facing increasing scrutiny regarding compliance with healthcare regulations and the strict prosecution of any *fraud and abuse* violations. Despite the June 2012 U.S. Supreme Court decision upholding the constitutionality of the ACA and the related implementation of the act, issues related to the regulation of healthcare enterprises, assets, and services on both federal and state levels are yet to be resolved. The sweeping nature of the ACA will continue to drive ongoing changes in the structure, operation, and financing of many healthcare provider enterprises.

The future performance of a healthcare entity is diminished as the level of uncertainty related to *healthcare business and capital structures*; *operations*; and *current marketing plans* increases in response to the evolving regulatory environment. The increasing level of uncertainty may result in an increased the perception of risk regarding the ability of a healthcare entity to continue to generate a projected flow of economic benefit. The adviser may assist the healthcare enterprise by mitigating the risk related to regulatory uncertainty by providing timely analysis and assistance in monitoring shifts in the regulatory environment.

Reimbursement Risk

A significant source of revenue for a healthcare entity is Medicare reimbursement. Annual changes in Medicare reimbursement policies can significantly affect the perceived level of risk related to the *forecasted financial performance* of a healthcare enterprise. With Medicare's conversion to a prospective payment system (PPS), the projection of payment for services was provided a relative certainty. Further, commercial payors typically indexing their payments for services rendered to the rate established by the Medicare PPS similarly provided a level of certainty in the commercial market. While Congress changes Medicare reimbursement rates on an annual basis, this constitutes, to some degree, a *predictable change*, which does not act to increase the perception of *uncertainty*. However, the opportunity for Congressional action regarding reimbursement does raise the specter of the potential for a change of position on healthcare reimbursement. Recent rumblings regarding the possibility of a *permanent doc fix* leaves lingering uncertainty regarding the eventual path of future healthcare reimbursement. This uncertainty regarding reimbursement under the prospective payment systems is only compounded by the unease associated with the accelerating shift from fee for service payments to VBR.

The adviser can assist in mitigating the uncertainty related to reimbursement for a healthcare enterprise by monitoring developments within the reimbursement environment and providing timely information to decision makers.

Competitive Risk

In recent years, *consumer-driven healthcare* has increased due to the shift away from *defined benefits* to *defined contributions* of premium coverage plans. This shift has placed more of the burden of premium payment directly on the insured patients. As a result, economic pressures from this new paradigm have incentivized greater *direct-to-consumer advertising* by both medical providers and pharmaceutical companies.[60] Competition within the healthcare industry is also complicated by those unique characteristics of the healthcare industry that hinder the traditional notion of economic behavior. For example, because the relationship between *price* and *quality of care* is generally defined by payors rather than the direct consumers, information asymmetries lead to patients who are less equipped to make informed healthcare purchase decisions in comparison to consumers in other non-healthcare related markets. Also, the indirect application of price to consumers may lead to excess utilization of non-essential services, as the relatively fixed price (i.e., premium plus any co-pays or deductibles) paid by the consumer fails to efficiently *ration* the healthcare resources.

Despite these *anomalies* in the healthcare marketplace, the competition among healthcare entities can become intense as these entities endeavor to add new services or expand to new markets. The development of ACOs may lead to a reduction the totally number of competitors in a given market and may serve the purpose of consolidating the fractious healthcare industry.

60 "The Cost of Pushing Pills: A New Estimate of Pharmaceutical Promotion Expenditures in the United States" By Marc-Andre Gagnon and Joel Lexchin, Public Library of Science, Vol. 5, No. 1, January 2008, p. 0029.

The adviser should carefully review the competitive environment within the specific MSA in which the healthcare enterprise operates to assist the enterprise in determining the likelihood of changes to the firms comprising the competitor base of the enterprise.

Technological Risk

The increased emphasis on advancements and utilization of new technologies is emblematic of the current era of healthcare reform, with change constantly on the horizon. The style of medicine practiced in the U.S. exhibits an intensive technological focus which is unparalleled elsewhere. U.S. society generally favors the application by providers of ever more advanced medical technologies and the drive to technological advancement is often perceived as a source of professional prestige among providers. The future direction of patient care services will undoubtedly be shaped by these technological advancements in the clinical treatment of patients, as well as, by a reimbursement environment that rewards providers based on *quality* over *quantity*.

The continual turnover in technology required within the healthcare industry lends *predictability* to the level of technological change in that, while not specific with respect to the type of new technology, it is constant in its effect on the delivery of healthcare services. The additional risk for healthcare entities is not only the *change in technology* (which may render some providers obsolete) within the industry, but it is also in the inability to foresee the arrival of new technologies for a subject entity's specific services, as well as the unanticipated demand for capital to fund their acquisition, implementation, and operation of cutting edge technologies. The old adage, "No Bucks, No Buck Rogers," is particularly pertinent to this capital adequacy risk factor. Accordingly, the valuation analyst should be aware of the technological trends within the particular industry sector and sub-sector, as well as the particular specialty and sub-specialty of the subject entity.

SOURCES OF BENCHMARKING DATA

Healthcare industry survey benchmarking data may be obtained from several publicly available sources; this data enables an analyst to compare the financial, operational, and clinical performance data for a particular healthcare entity to peer group (industry-specific) data. The most current possible survey data should always be utilized, but it should be noted that survey data publication delays of a year or more are not uncommon. In the rapidly changing healthcare reimbursement and regulatory environment, there are often significant annual changes, so utilizing data from different years due to publication delays may affect the efficacy and applicability of the analysis.

There exists a wide variety of national and regional sources of published data available for the comparison of the financial, clinical, economic, and operational performance of healthcare enterprises with the historical performance of industry peers. The surveys presented in the next few sections represent some of the more widely known and generally accepted sources in the industry.

BENCHMARKING SURVEYS WITH COMPENSATION AND EXPENSE DATA

See tables 2-1 and 2-2 to identify several criteria provided in the various compensation and production surveys described in this section.

Table 2-1: Types of Compensation and Production Survey Criteria

	AMA*,**,†	AMGA*,†	MGMA*,†	NSCHBC†	SCA†	ZABKA†
Types of Revenue Data						
Accounts Receivable			X	X		
Collections	X	X	X	X	X	
Compensation	X	X	X	X	X	X
Gross Charges		X	X	X	X	
Compensation Criteria						
Demographic Classification			X	X		
Employment Status	X		X			
Gender			X			
Geographic Section	X	X	X		X	X
Group Type	X	X	X		X	
Hours Worked per Week			X			
Medical Specialty	X	X	X	X	X	X
Method of Compensation	X		X			
Percent of Capitation Revenue			X			
Size of Practice	X	X	X	X		
Weeks Worked per Year			X			
Years in Specialty			X			
Gross Charges Criteria						
Employment Status			X			
Gender			X			
Geographic Section	X		X	X	X	
Group Type			X	X		
Hours Worked per Week	X		X			
Medical Specialty	X	X	X	X	X	X
Method of Compensation			X			
Percent of Capitation Revenue			X			
Size of Practice	X		X			
Weeks Worked per Year	X		X			
Years in Specialty			X			

** Survey includes cost data.*
*** Survey includes expense data.*
† AMA: American Medical Association; AMGA: American Medical Group Association; MGMA: Medical Group Management Association; NSCHBC: National Society of Certified Healthcare Business Consultants [formerly known as National Association of Healthcare Consultants (NAHC)]; SCA: Sullivan, Cotter and Associates, Inc.; ZABKA: John R. Zabka Associates, Inc.

Table 2-2: Criteria of Surveys Including Cost and Expense Benchmarking Data

	AMA*,**,†	AMGA*,†	MGMA*,†	NSCHBC†
Types of Expense Data				
Accounting			X	
Administrative Costs			X	X
Advertising			X	X
Automobile				X
Business Professional Fees				X
Dues and Education				X
Equipment		X	X	X
Insurance	X	X	X	X
Laboratory			X	X
Occupancy Costs		X	X	X
Other Expenses		X	X	X
Professional Promotion		X	X	X
Staffing Costs		X	X	X
Supplies		X	X	X
Taxes				X
Telephone				X
Staffing Criteria				
Administrative Support			X	X
Clinical Laboratory			X	X
Housekeeping, Maintenance, Security		X	X	X
Information Technology		X	X	
Licensed Practical Nurses		X	X	
Medical Assistants, Nurses Aides		X	X	X
Other Medical Support	X		X	X
Radiology and Imaging			X	
Registered Nurses		X	X	
Retirement		X		X
Utilization Data				
Total Relative Value Units			X	
Work Relative Value Units		X	X	

** Survey includes cost data.*
*** Survey includes expense data.*
† AMA: American Medical Association; AMGA: American Medical Group Association; MGMA: Medical Group Management Association; NSCHBC: National Society of Certified Healthcare Business Consultants [formerly known as National Association of Healthcare Consultants (NAHC)].

American Medical Association (AMA) Surveys

The American Medical Association (AMA) maintains the most comprehensive database of information on physicians in the United States, with information on more than 1.4 million physicians, residents, and medical students in the U.S., including 411,000 graduates of foreign medical schools residing and lawfully practicing in the U.S.[61] Started in 1906, the AMA *Physician Masterfile*, which contains information on physician education, training, and professional certification information, is updated through the collection and validation efforts of AMA Division of Survey and Data Resources.[62] The following AMA surveys publish data related to the demographics of the U.S. physician workforce:

61 "AMA Physician Masterfile" American Medical Association, 2015, http://www.ama-assn.org/ama/pub/about-ama/physician-data-resources/physician-masterfile. (Accessed 3/20/15).
62 Ibid.

(a) *Physician Characteristics and Distribution in the U.S.* is an annual survey based on a variety of demographic information from the Physician Masterfile dating back to 1963. It includes detailed information regarding trends, distribution, and professional and individual characteristics of the physician workforce.[63]
(b) *Physician Socioeconomic Statistics*, published from 2000 to 2003, was a result of the merger between two AMA annuals: *Socioeconomic Characteristics of Medical Practice* and *Physician Marketplace Statistics*.[64] Data was compiled from a random sampling of physicians from the Physician Masterfile into what is known as the Socioeconomic Monitoring System, which includes physician age profiles, practice statistics, utilization, physician fees, professional expenses, physician compensation, revenue distribution by payor, and managed care contracts, among other categories.[65]

Group Practice Associations Compensation and Production Surveys

The AMGA, formerly known as the American Group Practice Association, has conducted the *Medical Group Compensation and Financial Survey* (known as the *Medical Group Compensation and Productivity Survey* until 2004) for twenty-two years. This annual survey is co-sponsored by Sullivan, Cotter, and Associates, Inc., which is responsible for the independent collection and compilation of survey data.[66] Compensation and production data are summarized by capitation level, geographic region, and specialty grouping.[67]

The Medical Group Management Association's (MGMA) *Physician Compensation and Production Survey* is one of the largest in the United States with approximately 4,100 group practices responding as of the 2014 edition.[68] Data is provided on compensation and production for over 100 specialties.

Medical Practice Expense Surveys

MGMA's *Cost Survey* is one of the most well-known surveys of group practice income and expense data, having been published in some form or other since 1955. It obtained more than 2,400 respondents combined for the 2013 surveys: *Cost Survey for Single Specialty Practices* and *Cost Survey for Multispecialty Practices*.[69] Data is provided for a detailed listing of expense categories and is also calculated as a percentage of revenue and per full-time equivalent (FTE) physician, FTE provider, patient, square foot, and RVU.[70] The survey provides information on multispecialty practices by performance ranking, geographic region, legal organization, size of

63 "Physician Characteristics and Distribution in the U.S.: 2008 Edition" By Derek R. Smart and Jayme Sellers, American Medical Association, 2008, p. iii-iv.
64 "Physician Socioeconomic Statistics: Profiles for Detailed Specialties, Selected States, and Practice Arrangements" By John D. Wassenaar and Sara L. Thran, 2003 Edition, American Medical Association, 2003, p. 1.
65 Ibid.
66 "2014 Medical Group Compensation and Financial Survey: 2014 Report Based on 2013 Data" American Medical Group Association and Sullivan, Cotter and Associates, Inc., Alexandria, VA. 2014, p. 1.
67 Ibid, p. 1, 3.
68 "Physician Compensation and Production Survey: 2014 Report Based on 2013 Data" Medical Group Management Association, 2014, p. 219.
69 "Cost Survey for Multispecialty Practices: 2013 Report Based on 2012 Data" Medical Group Management Association, 2013, p.ix; "Cost Survey for Singlespecialty Practices: 2013 Report Based on 2012 Data" Medical Group Management Association, 2012, p. 16-25;
70 "Cost Survey for Multispecialty Practices: 2013 Report Based on 2012 Data" Medical Group Management Association, 2012, p. 16-25; "Cost Survey for Singlespecialty Practices: 2013 Report Based on 2012 Data" Medical Group Management Association, 2012, p. 16-25;

practice, and percent of capitated revenue.[71] Detailed income and expense data is provided for single specialty practice in more than fifty different specialties and subspecialties.[72]

The *Medical Group Financial Operations Survey* was created through a partnership between RSM McGladrey and the AMGA and provides benchmark data on support staff and physician salaries, physician salaries, staffing profiles and benefits, and other financial indicators.[73] Data is reported as a percent of managed care revenues, per FTE physician and per square foot and is subdivided by specialty mix, capitation level, and geographic region with detailed summaries of single specialty practices in several specialties.[74]

Statistics: Medical and Dental Income and Expense Averages is an annual survey produced by the National Society of Certified Healthcare Business Consultants (NSCHBC), formerly known as the National Association of Healthcare Consultants (NAHC), and the Academy of Dental CPAs. It has been published annually for a number of years and the *2014 Report Based on 2013 Data* included detailed income and expense data from more than 2,800 practices and 5,800 physicians in sixty specialties.[75]

BENCHMARKING SURVEYS BY CRITERIA

Table 2-3 illustrates a variety of available financial benchmarking data. Each category of data (for example, revenue, expense, and utilization) is further divided into subcategories for a more in-depth look into potential benchmarking metrics by criteria.

Table 2-3: Various Financial Benchmarking Criteria

	AMA*,**,†	AMGA*,†	MGMA*,†	NSCHBC†
Collections Criteria				
Adjusted Fee for Service Collection (%)			X	
Fee for Service Collection (%)			X	X
Accounting Criteria				
Accounts Receivable			X	X
Assets			X	
Current Assets			X	
Current Liabilities			X	
Liabilities			X	
Working Capital			X	
Dues and Education Criteria				
Conventions or Seminars				X
Dues or Journals				X
Insurance Criteria				
Business				X
Malpractice	X		X	X

71 "Cost Survey for Multispecialty Practices: 2013 Report Based on 2012 Data" Medical Group Management Association, 2012, p. 16-25;
72 "Cost Survey for Singlespecialty Practices: 2013 Report Based on 2012 Data" Medical Group Management Association, 2012, p. 16-25;
73 "2002 Medical Group Financial Operations Survey: 2002 Report Based on 2001 Data" American Medical Group Association and RSM McGladrey: Inc., Alexandria, VA, 2002, p. 3.
74 Ibid, p. 3, 5.
75 "Practice Statistics" National Society of Certified Healthcare Business Consultants, http://www.nschbc.org/statistics/ (Accessed 3/27/15).

	AMA*,**,†	AMGA*,†	MGMA*,†	NSCHBC†
Occupancy Cost Criteria				
Building Depreciation				X
Building Interest				X
Janitorial				X
Rent				X
Utilities				X
Supplies Criteria				
Clerical				X
Clinical			X	X
Taxes Criteria				
Income				
Payroll				X
Other				X
Total Relative Value Unit (RVU) Criteria				
Group Type			X	
Hospital Ownership			X	
Percent of Capitation Revenue			X	
Physician Compensation per Total RVU			X	
Physician Compensation per Total RVU by Group Type			X	
Work Relative Value Unit (wRVU) Criteria				
Group Type			X	
Hospital Ownership			X	
Percent of Capitation Revenue			X	
Physician Compensation per Physician wRVU		X	X	
Physician Compensation per Physician wRVU by Group Type		X	X	

** Survey includes cost data.*
*** Survey includes expense data.*
† AMA: American Medical Association; AMGA: American Medical Group Association; MGMA: Medical Group Management Association; NSCHBC: National Society of Certified Healthcare Business Consultants [formerly known as National Association of Healthcare Consultants (NAHC)].

BENCHMARKING DATA SOURCES FOR HEALTH SERVICE SECTOR ENTITIES

Several sources of available data for the various entities in the healthcare industry exist. See tables 2-4, 2-5, 2-6, and 2-7 for some representative samples of generally accepted compensation, transaction surveys, and resources for differing healthcare organizations and enterprises.

Table 2-4: Healthcare Support Service Businesses

Survey Title	Publisher	Frequency	URL
HEALTH INSURERS			
Insurer Ratings and Financial Information	AM Best Co	Annual	http://www.ambest.com/sales/default.asp
HMO/PPO Directory	Medical Economics Publishing	Annual	www.greyhouse.com/hmo_ppo.htm
HMO-PPO/Medicare-Medicaid Digest	Aventis Pharmaceuticals	Annual	www.managedcaredigest.com
Market Overviews	HealthLeaders-Interstudy	Various	http://home.healthleaders-interstudy.com/Market-Overviews
PULSE	The Sherlock Company	Weekly	http://www.sherlockco.com/pulse.shtml

(continued)

Survey Title	Publisher	Frequency	URL
BILLING COMPANIES			
Medical Coding Salary Survey / Healthcare Salary Survey	American Association of Professional Coders	Annual	https://www.aapc.com/resources/research/medical-coding-salary-survey/
CONSULTANTS			
Compensation Metrics in US Consulting	Kennedy Consulting Research & Advisory	Annual	http://www.kennedyinfo.com/consulting/research/operatingmetrics/comp-2014?C=xwJm4O6sUbIxkfbw
Various Healthcare Industry Publications	PriceWaterhouseCoopers	Various	http://www.pwc.com/gx/en/healthcare/publications/index.jhtml
Health & Life Sciences Insights	Oliver Wyman	Various	http://www.oliverwyman.com/insights/health-life-sciences.html
Insight	Milliman	Various	http://us.milliman.com/insight/healthcare/

Table 2-5: Select Surveys Containing Healthcare Entity Transaction Data

Name of Survey	Source (Name of Association/Publisher)	Website
The Health Care M&A Report	Levin Associates	www.levinassociates.com
Pratts Stats	BVR	http://bvmarketdata.com/
Bizcomps	BVR	http://bvmarketdata.com/
Goodwill Registry	Health Care Group	www.thehealthcaregroup.com/c-5-goodwill-registry-online.aspx
Mergerstat Review	FactSet Mergerstat, LLC	https://www.mergerstat.com/newsite/bookstore.asp
BVDataWorld Database	ValuSource	www.vswebapp.com/
Done Deals	NVST, Inc.	www.donedeals.com
SDC Platinum	Thomson Reuters	http://thomsonreuters.com/en/products-services/financial/investment-banking-and-advisory/sdc-platinum.html

Table 2-6: Select Surveys for Hospitals, Health Systems, and Physician Organizations

Survey Title	Publisher	Frequency	Website
HOSPITALS			
AHA Hospital Statistics	American Hospital Association	Annual, more than sixty years of data	http://www.ahadataviewer.com/book-cd-products/AHA-Statistics/
The Almanac of Hospital Financial and Operating Indicators	Optum 360	Annual	https://www.optumcoding.com/Product/43409/
The National Hospital Discharge Survey	National Center for Health Statistics	Annual, began in 1965	http://www.cdc.gov/nchs/nhds/about_nhds.htm
AMBULATORY SURGERY CENTERS (ASCs)			
ASCA Benchmarking	Ambulatory Surgery Center Association	Annual	http://www.ascassociation.org/resourcecenter/benchmarking/ascabenchmarking
Intellimarker ASC Benchmarking Study	VMG Health	Annual	http://vmghealth.com/publications/intellimarker/
DIAGNOSTIC IMAGING CENTER			
Annual Statement Studies	Risk Management Association	Annual	http://www.rmahq.org/home

Survey Title	Publisher	Frequency	Website
COSMETIC AND AESTHETIC MEDICINE CENTER			
Plastic Surgery Procedural Statistics	American Society of Plastic Surgeons	Annual	http://www.plasticsurgery.org/news/plastic-surgery-statistics.html
HOME HEALTH CARE			
Healthcare Cost Report Information System Data Set - Home Health Agency	U.S. Centers for Medicare and Medicaid Services	Annual	http://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/Cost-Reports/HHA.html
Basic Statistics About Home Care	National Association for Home Care	Irregular, last updated November 2010	http://www.nahc.org/advocacy-policy/home-care-hospice-facts-stats/
LONG-TERM CARE			
Nursing Home Salary and Benefits Report	Hospital and Healthcare Compensation Service	Annual	http://www.hhcsinc.com/hcsreports.htm
PHYSICIAN GROUP PRACTICES (MULTI- AND SINGLE-SPECIALTY)			
Cost Survey for Single-Specialty Practices	MGMA	Annual	http://www.mgma.com/industry-data/survey-reports/mgma-surveys-cost-revenue-and-staffing-surveys
Cost Survey for Multispecialty Practices	MGMA	Annual	http://www.mgma.com/industry-data/survey-reports/mgma-surveys-cost-revenue-and-staffing-surveys
Medical Group Compensation and Financial Survey	American Medical Group Association	Annual	https://www.amga.org/store/detail.aspx?id=COMPSRV_2014

Table 2-7: Select Surveys for Other Allied Health Providers

Survey Title	Publisher	Frequency	URL
DENTISTRY			
Statistics: Medical and Dental Income and Expense Averages	National Society of Certified Healthcare Business Consultants, and the Academy of Dental CPAs	Annual	http://www.nschbc.org/statistics/
CHIROPRACTIC			
Statistics: Medical and Dental Income and Expense Averages	National Society of Certified Healthcare Business Consultants, and the Academy of Dental CPAs	Annual	http://www.nschbc.org/statistics/
OPTOMETRY			
Caring for the Eyes of America	American Optometric Association	Biennial	http://www.aoa.org/optometrists/tools-and-resources/research-and-information-center/survey-reports?sso=y
Clinical Practice Survey	American Optometric Association	Annual	http://www.aoa.org/optometrists/tools-and-resources/research-and-information-center/survey-reports?sso=y

(continued)

Survey Title	Publisher	Frequency	URL
PSYCHOLOGY			
National Association of Psychiatric Health Systems (NAPHS) Annual Survey	National Association of Psychiatric of Psychiatric Health Systems	Annual	https://www.naphs.org/resources/home.aspx
Statistics: Medical and Dental Income and Expense Averages	National Society of Certified Healthcare Business Consultants, and the Academy of Dental CPAs	Annual	http://www.nschbc.org/statistics/
PHYSICAL THERAPY			
APTA Evidence and Research	American Physical Therapy Association	—	http://www.apta.org/EvidenceResearch/
Statistics: Medical and Dental Income and Expense Averages	National Society of Certified Healthcare Business Consultants, and the Academy of Dental CPAs	Annual	http://www.nschbc.org/statistics/

SOURCES OF PHYSICIAN COMPENSATION DATA

Table 2-8 lists generally accepted industry sources for physician compensation data (including clinical and on-call compensation).

Table 2-8: Physician Compensation Surveys

Name of Survey	Source (Name of Association/Publisher)	Website
All Health Care Salary Survey	Abbott, Langer Association	www.abbott-langer.com/index.cfm?title=All-Health-Care-Salary-Survey&fuseaction=SRSurveys.Salary-Survey&SurveyID=6&participate=0&JF=N&AL=N&CountryId=193
Assisted Living and Long-Term Care Salary Survey	Abbott, Langer Association	http://salary-surveys.erieri.com/?fuseaction=SRSurveys.Salary-Survey&SurveyID=24294&CountryId=193
Health Care Providers Salary Survey	Abbott, Langer Association	http://salary-surveys.erieri.com/?fuseaction=SRSurveys.Salary-Survey&SurveyID=24281&CountryId=193
Hospitals Salary Survey	Abbott, Langer Association	http://salary-surveys.erieri.com/?fuseaction=SRSurveys.Salary-Survey&SurveyID=160&CountryId=193
Laboratory Services Salary Survey	Abbott, Langer Association	http://salary-surveys.erieri.com/?fuseaction=SRSurveys.Salary-Survey&SurveyID=24280&CountryId=193
Medical Research Salary Survey	Abbott, Langer Association	http://salary-surveys.erieri.com/?fuseaction=SRSurveys.Salary-Survey&SurveyID=60&CountryId=193
Mental Health Services Salary Survey	Abbott, Langer Association	http://salary-surveys.erieri.com/?fuseaction=SRSurveys.Salary-Survey&SurveyID=24286&CountryId=193
Medical Group Compensation and Financial Survey	American Medical Group Association	https://ecommerce.amga.org/iMISpublic/Core/Orders/product.aspx?catid=3&prodid=1489
Medicare Provider Utilization and Payment Data: Physician and Other Supplier	Centers for Medicare & Medicaid Services	Data.CMS.Gov
National Emergency Medicine Salary Survey: Clinical Results	Daniel Stern & Associates	http://www.danielstern.com/compensation-surveys/
ASC Employee Salary and Benefits Survey	Federated Ambulatory Surgery Association	https://members.ascassociation.org/eweb/DynamicPage.aspx?Site=ASC&WebKey=e1b0a66d-f0d3-4894-a342-77d419ae716b
Physician Compensation Report	Hay Group	www.haygrouppaynet.com.

Name of Survey	Source (Name of Association/Publisher)	Website
Hospital Salary and Benefits Report	Hospital & Healthcare Compensation Service; John R. Zabka Associates, Inc.	www.hhcsinc.com/hcsreports.htm
Physician Salary Survey Report	Hospital & Healthcare Compensation Service; John R. Zabka Associates, Inc.	www.hhcsinc.com/hcsreports.htm
Physician Compensation and Production Survey	Medical Group Management Association (MGMA)	www5.mgma.com/ecom/Default.aspx?tabid=138& action=INVProductDetails&args=4610&kc=SUR10WE00
Modern Healthcare Physician Compensation Review	Merritt Hawkins and Associates	www.merritthawkins.com/pdf/2005_Modern_Healthcare_Physician_Compensation_Review.pdf
Physician Placement Starting Salary Survey	MGMA	www5.mgma.com/ecom/Default.aspx?tabid=138& action=INVProductDetails&args=4609&kc=SUR10WE00
Academic Practice Compensation and Production Survey for Faculty and Management	MGMA	www5.mgma.com/ecom/Default.aspx?tabid=138& action=INVProductDetails&args=4588&kc=SUR10WE00
Medical Directorship and On-Call Compensation Survey	MGMA	www5.mgma.com/ecom/Default.aspx?tabid=138& action=INVProductDetails&args=4623&kc=SUR10WE00
Northwest Health Care Industry Salary Survey	Milliman	http://salarysurveys.milliman.com/industry_surveys/healthcare_surveys/northwest_healthcare_salary/
Physician On-Call Pay Survey Report	Sullivan Cotter and Associates, Inc.	www.sullivancotter.com/surveys/purchase.php
Physician Compensation and Productivity Survey Report	Sullivan Cotter and Associates, Inc.	www.sullivancotter.com/surveys/purchase.php
Staff Salary Survey	The Health Care Group	http://thehealthcaregroup.com/p-18-staff-salary-survey.aspx
Warren Salary Survey	Warren Surveys, a division of DeMarco & Associates	http://www.warrensurveys.com/
Survey of Health Care Clinical & Professional Personnel Compensation	Watson Wyatt Data Services	www.wwds.com/OurProducts/ProductDetail.asp?ProductID=18011&CatID=1

SOURCES OF HEALTHCARE EXECUTIVE COMPENSATION DATA

Many surveys and other sources of healthcare executive and administrative or management compensation data exist. The following table, Table 2-9, lists several of the most prominent sources.

Table 2-9: Executive Compensation Surveys

Name of Survey	Source	Website
Medical Directorship Compensation Report	Medical Group Management Association (MGMA)	http://data.mgma.com/DataDive/rdPage.aspx
Hospital Salary & Benefits Report	Hospital & Healthcare Compensation Service; John R. Zabka Associates, Inc.	www.hhcsinc.com/hcsreports.htm
Physician Executive Compensation Survey	The American College of Physician Executives	www.acpe.org/membersonly/compensationsurvey/index.aspx?theme=c
Integrated Health Networks Compensation Survey	William M. Mercer, Inc.	-
2014 Executive Pay in the Medical Technology Industry Report	Top 5 Data Services, Inc.	www.top5.com
2014 Biotech/Pharma Industry Executive Pay Report	Top 5 Data Services, Inc.	www.top5.com
Executive Compensation Assessor®	Economic Research Institute	http://www.erieri.com/executivecompensationassessor
Multi-Facility Corporate Compensation Report	Hospital & Healthcare Compensation Service	www.hhcsinc.com/hcsreports.htm
LOMA Executive Compensation Survey	LOMA	www.loma.org/compexec.asp
Culpepper Executive Compensation Survey	Culpepper	www.culpepper.com/info/cs/durveys/Executive/default/asp
Northwest Health Care Executive Compensation Survey	Milliman	http://salarysurveys.milliman.com/industry_surveys/healthcare_surveys/northwest_healthcare_executive_compensation/
Board of Directors Compensation Survey	Milliman	http://salarysurveys.milliman.com/regional_surveys/northwest_surveys_general/northwest_board_of_directors/
Northwest Management and Professional Salary Survey	Milliman	http://salarysurveys.milliman.com/regional_surveys/northwest_surveys_general/northwest_management_and_professional/
Manager and Executive Compensation in Hospitals and Health Systems Survey Report	Sullivan Cotter and Associates, Inc.	https://www.sullivancotter.com/healthcare-compensation-surveys/purchase-surveys/

CONCLUSION

With the advent of healthcare reform, the demand for a uniform standard for benchmarking of healthcare practices that includes quality, performance, productivity, utilization, and compensation measures seems to be increasing. Benchmarking will be used progressively more frequently by healthcare organizations in order to facilitate reductions in healthcare expenditures while simultaneously improving products and service quality.

> Benchmarking will be used progressively more by healthcare organizations in order to facilitate reductions in expenditures while simultaneously improving products and service quality.
>
> ***Harold R. Benson, Fall 1994.***

From a management perspective, the use of benchmarking as a performance indicator will become increasingly important in healthcare as quality assurance and effectiveness research becomes more pronounced through pay for performance initiatives and increasingly stringent fraud and abuse laws. From a valuation standpoint, as the Internal Revenue Service increases its initiatives, including payroll audits, confirming the fair market value of compensation for executives, physicians, and other practitioners through benchmarking data will become progressively more important, especially for nonprofit hospitals wishing to retain their tax exempt status.[76] Additionally, if healthcare spending continues to rise, consumers and regulators will continue to view providers with increasing scrutiny, further emphasizing the importance of standardizing comparative measures to benchmark utility and productivity of healthcare provider practices.

The wide range in benchmarking processes, indicators, and categorization schemes will necessarily delay the implementation of a uniform system of reporting, but as the use and reputability of entities, such as the Joint Commission, continue to grow, healthcare industry benchmarking processes, and the necessary oversight and regulation of the benchmarking process, will continue to improve.

Key Sources

Key Source	Description	Citation	Website
"Benchmarking the Benchmarking Models" by G. Anand and Rambabu Kodali, Benchmarking: An International Journal, Vol. 15, No. 3 (2008)	Provides an extensive listing of classification schemes and benchmarking types that have been published in peer-reviewed literature.	"Benchmarking the Benchmarking Models" By G. Anand and Rambabu Kodali, Benchmarking: An International Journal, Vol. 15, No. 3 (2008), p. 260–61.	n/a
"Benchmarking Strategies: A Tool for Profit Improvement" by Rob Reider, published by John Wiley & Sons, Inc., 2000	Provides guidelines for how to identify the correct performance indicator or organizational benchmarking.	"Benchmarking Strategies: A Tool for Profit Improvement," by Rob Reider, New York, NY: John Wiley & Sons, Inc., 2000, p. 17–19.	n/a
U.S. Bureau of Labor Statistics	Source of national economic data, for example, labor and unemployment statistics.	"Bureau of Labor Statistics" Bureau of Labor Statistics, www.bls.gov (Accessed 3/27/15).	www.bls.gov
"The National Economic Review" by Mercer Capital	Source of national economic data, updated quarterly, that includes several economic indicators of interest, for example, employment, housing, income, gross domestic product, interest rates, and so forth.	"National Economic Review." Mercer Capital, http://www.nationaleconomic review.net/ (Accessed 3/27/15).	http://www.national economicreview.net/

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76 "An Introduction to I.R.C. 4958 (Intermediate Sanctions)" By Lawrence M. Brauer et al., Internal Revenue Service (2002), http://apps.irs.gov/pub/irs-tege/eotopich02.pdf (Accessed 12/28/09), p. 275-276; "Enforcement Efforts Take Aim at Executive Compensation of Tax-Exempt Health Care Entities" By Candace L. Quinn and Jeffrey D. Mamorsky, 18 Health Law Reporter 1640, (December 17, 2009), http://news.bna.com/hlln/display/batch_print_display.adp (Accessed 12/28/09).

Key Source	Description	Citation	Website
"Survey of Current Business" by the U.S. Department of Commerce	Resource for national economic business data	"Survey of Current Business Online," Bureau of Economic Analysis, www.bea.gov/scb/ (Accessed 3/27/15).	www.bea.gov/scb/
U.S. Department of the Commerce's Bureau of the Census	Resource for national economic business data	"United States Census Bureau" United States Census Bureau, www.census.gov (Accessed 3/27/15).	www.census.gov
Economic and Statistics Administration	Resource for national economic data.	"Indicators" Economics and Statistics Administration, http://www.esa.doc.gov/content/indicators (Accessed 3/27/15).	www.esa.doc.gov/
U.S. Bureau of Economic Analysis	Resource for national economic data.	"U.S. Department of Commerce Bureau of Economic Analysis" Bureau of Economic Analysis, http://www.bea.gov/ (Accessed 3/27/15).	www.bea.gov/
Claritas	Nielsen Claritas is "the most accurate online source for U.S. Demographics…"	"SiteReports" Nielsen Claritas, http://www.claritas.com/sitereports/Default.jsp (Accessed 3/27/2015).	http://www.claritas.com/sitereports/Default.jsp
"Physician Masterfile" by American Medical Association	Data, updated annually, regarding physician education, training, and professional certification information, which is used to update various American Medical Association (AMA) surveys.	"AMA Physician Masterfile" American Medical Association,http://www.ama-assn.org/ama/pub/about-ama/physician-data-resources/physician-masterfile.page (Accessed 3/27/15).	www.ama-assn.org/
"Physician Characteristics and Distribution in the U.S." by American Medical Association	Annual survey providing physician demographic information, based on the AMA Physician Masterfile.	"Physician Characteristics and Distribution 2015" American Medical Association, https://commerce.ama-assn.org/store/catalog/productDetail.jsp?product_id=prod2530012&navAction=push (Accessed 3/27/15).	https://commerce.ama-assn.org/store/catalog/productDetail.jsp?product_id=prod2530012&navAction=push
"Medical Group Compensation and Financial Survey" by American Medical Group Association	Annual survey providing compensation and financial data for medical specialties.	"AMGA 2014 Medical Group Compensation and Financial Survey" American Group Management Association, https://www.amga.org/store/detail.aspx?id=COMPSRV_2014 (Accessed 3/27/15).	https://www.amga.org/store/detail.aspx?id=COMPSRV_2014
"Physician Compensation and Production Survey" by Medical Group Management Association	Annual survey providing information on the "critical relationship between compensation and productivity for providers."	"Physician Compensation and Productivity Reports" Medical Group Management Association, http://www.mgma.com/industry-data/survey-reports/physician-compensation-and-production-survey (Accessed 3/27/2015).	http://www.mgma.com/industry-data/survey-reports/physician-compensation-and-production-survey
"Cost, Revenue, and Staffing Surveys" by Medical Group Management Association	Annual survey currently published by type of practice, providing data for various medical expense data.	"Cost, Revenue and Staffing Survey," Medical Group Management Association, http://www.mgma.com/industry-data/survey-reports/mgma-surveys-cost-revenue-and-staffing-surveys (Accessed 3/27/2015).	http://www.mgma.com/industry-data/survey-reports/mgma-surveys-cost-revenue-and-staffing-surveys
"Statistics: Medical and Dental Income and Expense Averages" by National Society of Certified Healthcare Business Consultants and the Academy of Dental CPAs	Annual survey providing income and expense data for various medical and dental practitioners and practices.	"Practice Statistics," National Society of Certified Healthcare Business Consultants, http://www.nschbc.org/statistics/ (Accessed 3/27/15).	http://www.nschbc.org/statistics/

Associations

Type of Association	Professional Association	Description	Citation	Contact Information
National	Medical Group Management Association (MGMA)	"MGMA provides the essential education, legislative information, and data and career resources to help improve patient services and operational efficiencies."	"About the Medical Group Management Association," Medical Group Management Association, www.mgma.com/about/about-mgma	Medical Group Management Association 104 Inverness Terrace East Englewood, CO 80112-5306 Phone: 303-799-1111 or 877-275-6462 E-mail: support@mgma. Com www.mgma.com
National	American Group Management Association (AMGA)	"AMGA's mission is to support its members in enhancing population health and care for patients through integrated systems of care."	"About AMGA," American Group Management Association, https://www.amga.org/wcm/About/	American Group Management Association One Prince Street Alexandria, VA 22314-3318 Phone: 703-838-0033 Fax: 703-548-1890 www.amga.org
National	American Medical Association (AMA)	"AMA is dedicated to ensuring sustainable physician practices that result in better health outcomes for patients."	"About AMA," American Medical Association, http://www.ama-assn.org/ama/pub/about-ama.page	American Medical Association AMA Plaza 330 N. Wabash Ave. Chicago, IL 60611-5885 Phone: (800) 621-8335 www.ama-assn.org
National	National Society of Certified Healthcare Business Consultants (NSCHBC)	The NSCHBC is "a premier Society representing the best in the field of business healthcare consulting."	"National Society of Certified Healthcare Business Consultants," National Society of Certified Healthcare Business Consultant, http://www.nschbc.org/membership/index.cfm	National Society of Certified Healthcare Business Consultants 12100 Sunset Hills Road, Suite 130 Reston, VA 20190 Phone: 703-234-4099 Fax: 703-435-4390 E-mail: **info@nschbc.org** www.nschbc.org/
National	American Hospital Association (AHA)	The mission of AHA is to "advance the health of individuals and communities. The AHA leads, represents, and serves hospitals, health systems, and other related organizations that are accountable to the community and committed to health improvement."	"Vision & Mission," American Hospital Association, http://www.aha.org/about/mission.shtml	American Hospital Association 155 N. Wacker Dr. Chicago, IL 60606 Phone: 312-422-3000 www.aha.org

Chapter 3

Compensation and Income Distribution

KEY TERMS
Buy-in
Compensation Planning Committee
Consultants
Internal Revenue Code
Physician Compensation Plan

Key Concept	Definition	Citation	Concept Mentioned on Page #
Six Honest Serving-Men	A verse from Rudyard Kipling's *The Elephant's Child*: I keep six honest serving-men; (They taught me all I knew); Their names are What and Why and When and How and Where and Who	"I Keep Six Honest Serving Men," By Rudyard Kipling, Kipling Society, http://www.kiplingsociety.co.uk/poems_serving.htm (Accessed 3/26/2015).	88–89
Goal Congruence	The alignment of individual employee goals with overall organizational goals	"Management Accounting," By Anthony Atkinson, et. al., 4th Edition, Upper Saddle River, NJ: Prentice Hall, 2004, p. 319-320.	89
Role of Physician Compensation Plans	(1) Contribute to the incentive and performance feedback system, (2) assist in driving performance to achieve goals, and (3) facilitate more effective identification and communication of an organization's values, dynamic, productivity objectives, and performance expectations.	"Physician Compensation Strategies," By Craig Hunter and Max Reiboldt, 2nd Edition, Chicago, IL: American Medical Association, 2004, p. 53-56.	89–90
Components of Practitioner Compensation	(1) base salary for the tasks, duties, responsibilities, and accountabilities related to the position; (2) incentive pay (e.g., productivity bonus, quality incentive bonus, signing bonus, retention bonus) for job performance; and (3) benefits (e.g., health insurance plans, educational expenses, life insurance plans, retirement benefits, paid time off) "…provided by the organization [to] all or…groups of employees."	"Principles of Personnel Management," By Edwin Flippo, Second Edition, New York: NY: McGraw-Hill, 1966, p. 277; "Publication 535: Business Expenses," Internal Revenue Service, 2/12/2015, http://www.irs.gov/pub/irs-pdf/p535.pdf (Accessed 3/4/2015).	90
Fraud and Abuse Regulation	(1) Stark law, (2) False Claims Act, (3) Anti-Kickback statute, and (4) Internal Revenue Code	"Physician's Compensation: Measurement, Benchmarking, and Implementation," By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 32.	94–95
Common Mandate Enforced by all of the Safe Harbor Provisions	Physicians and practitioners must be compensated at *fair market value* rates and *commercially reasonable* levels.	"Physician Compensation Plans: State-of-the-Art Strategies," By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 147.	95
Compensation Plan Life Cycle	Phase 1: The Existing Plan; Phase 2: The Potential Plan; and Phase 3: The New Plan	"The Compensation Plan Development Process," in "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA, and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, pp. 39-42.	99–100
Duration of the Development Timeline	Depends on (1) the size of the practice; (2) how detrimental the redesign is to the organization's survival, legal compliance, or both; and (3) how difficult developing, transitioning, or both to a new plan will be.	"Physician Compensation Plans: Models for Aligning Financial Goals and Incentives," By Kenneth Hekman, Englewood, CO: Medical Group Management Association, 2002, p. 99-100.	100

Key Concept	Definition	Citation	Concept Mentioned on Page #
Ten Steps to Developing a Compensation Plan	Step 1: Determining Governance, Goals, and Principles Step 2: Investigating the Available Options Step 3: Benchmarking Step 4: Establishing a Framework Step 5: Detailing the Plan Infrastructure Step 6: Generating a Financial Model Step 7: Defending Against Alternative Models Step 8: Outlining Transition and Implementation Steps Step 9: Proposing the New Plan Step 10: Arriving at a Consensus	"Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p 24-37.	100
Governance of the Compensation Plan Development Process	Governance may be (1) top down (managerial) or (2) bottom up (physicians and practitioners elected to research alternative options). It can also follow (3) election of a compensation planning committee.	"Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA, and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 18.	101
The Role of Consultants	(1) Aiding in the evaluation of the existing system—identifying strengths, as well as opportunities for improvement (2) Offering knowledge and experience related to the various arrangements and alternatives available (3) Helping to establish goals and principles (4) Investigating the various foundational and specific options the practice may wish to entertain (5) Assisting in financial modeling of the alternative plans (6) Creating the materials needed for communicating and presenting proposed plan(s) (7) Launching the decision making process	"Physician Compensation Plans: State-of-the-Art Strategies," By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 29-30.	102
General Goals Inherent to a Successful Compensation System	(1) Incentivizing productivity (2) Reinforcing involvement in professional services, ancillary practices, outreach, leadership, and other diverse and potentially nonclinical roles (3) Encouraging teamwork and group solidarity (4) Guaranteeing that the system is fiscally sound (5) Elucidating specific performance expectations and responsibilities (6) Easing the process of recruiting and retaining practitioners (7) Ensuring that compensation and reimbursement methodologies complement each other	"How to Join, Buy, or Merge a Physician's Practice," By Yvonne Fox and Brett Levine, St. Louis, MO: Mosby-Year Book, 1998, p. 127-129.	102

(continued)

Key Concept	Definition	Citation	Concept Mentioned on Page #
Common Principles of Successful Compensation Plans	(1) Unbiased measurement systems (2) A concise number of performance metrics (3) Clearly defined and methodically enforced processes, expectations, repercussions, and objectives (4) Transparent documentation, communication, and enforcement (5) Clear and simple processes, expectations, repercussions, and objectives (6) Compensation stability (7) Appropriate weighting of individual and team accountability and responsibility (8) A feasible transition plan from current to future practices (9) Financial responsibility (10) Legal conformity	"Wage Incentive Methods: Their Selection, Installation, and Operation," By Charles Lytle, New York, NY: The Ronald Press Company, 1942, p. 71-73.	102–103
Compensation Plan Alignment	Ensuring that a potential plan aligns with external and internal factors that must be taken into consideration	"Four Basic Principles of Compensation," in "Physician's Compensation: Measurement, Benchmarking, and Implementation," by Lucy R. Carter, CPA, and Sara S. Lankford, CPA, John Wiley & Sons, Inc., 2000, pp. 59–61.	103
Spectrum of Physician Compensation Plan Frameworks	(1) team-oriented, (2) individualistic, and (3) muddled-middle ground.	"Physician Compensation Arrangements," by Daniel K. Zismer, An Aspen Publication, 1999, p. 62.	111–112
XYZ model	Total Salary = X + X' + Y + Z	"Designing a Physician Compensation and Incentive Plan for an Academic Healthcare Center," By Donna Steinmetz, Medical Group Management Association, 2006.	91–92

OVERVIEW

The first half of the twentieth century marked the emergence of consolidated business arrangements in healthcare professional practices. As a result, the means by which practitioners, namely physicians, were compensated evolved as well. Each emerging type of compensation plan became associated with certain benefits, as well as financial, legal, and clinical repercussions. In this chapter, compensation planning is dissected to identify the fundamental elements that are inherent to the development process, regardless of how future trends may influence healthcare professionals and their practices. These basic elements can be presented as they relate to Rudyard Kipling's "Six Honest Serving-Men":[1]

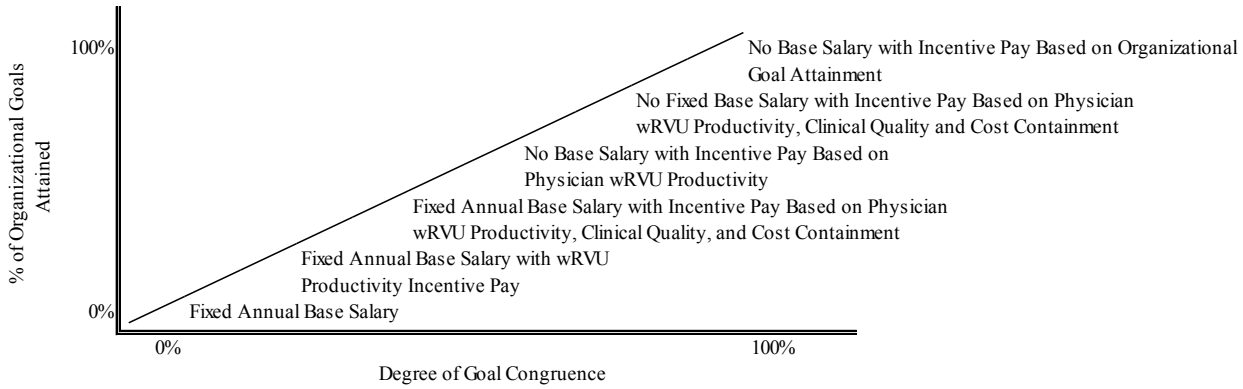
1 "I Keep Six Honest Serving Men" By Rudyard Kipling, Kipling Society, http://www.kiplingsociety.co.uk/poems_serving.htm (Accessed 3/26/2015).

"I KEEP six honest serving-men
(They taught me all I knew);
Their names are *What* and *Why* and *When* and *How* and *Where* and *Who*" [Emphasis added].

WHAT?—THE DEFINITION OF A PHYSICIAN COMPENSATION PLAN

A compensation plan is the means by which a firm provides "…adequate and equitable remuneration [to] personnel for their contributions to organizational objectives."[2] Both *for-profit entities, whose "...primary goal ... is to earn a profit by rendering services," and not-for-profit tax exempt entities, whose "...primary goal…is to provide goods or services that fulfill a social need at the lowest possible costs,"* [3] shape organizational objectives in the healthcare industry [Emphasis added]. An effective compensation system should achieve *goal congruence* by aligning both organizational and employee goals (see Figure 3-1: *Spectrum of Goal Congruence under Fee for Service Reimbursement*).[4]

Figure 3-1: Spectrum of Goal Congruence under Fee for Service Reimbursement



A *"...vital* [function that] *...contributes directly toward the accomplishment of...major organizational objective[s]..."*[5] is served by physicians in their role as the primary provider of professional medical services for healthcare enterprises. A *physician compensation plan* is a way of determining an appropriate method of compensating professionals for the services they provide and may involve allocating revenues and expenses from a healthcare enterprise in its

2 "Principles of Personnel Management" By Edwin Flippo, 2nd Ed., New York, NY: McGraw-Hill, 1966, p. 5.
3 "Principles of Financial & Managerial Accounting," By Carl Warren and Philip Fess, 3rd Ed., Cincinnati, OH: South-Western Publishing, 1992, p. 647
4 "Cost Management: Strategies for Business Decisions" By Ronald Hilton, et. al, 2nd Ed., Boston, MA: McGraw-Hill Irwin, 2003, p. 874; "Management Accounting" By Anthony Atkinson, et al, 4th Ed., Upper Saddle River, NJ, 2004, p. 319-320.
5 "Principles of Personnel Management" By Edwin Flippo, 2nd Ed., New York, NY: McGraw-Hill, 1966, p. 7.

totality to individual physicians.[6] In an increasingly labyrinthine marketplace of misaligned priorities, physician compensation plans may: (1) contribute to the incentive and performance feedback system; (2) assist in driving performance to achieve organizational goals; and (3) facilitate more effective identification and communication of an organization's values, dynamic, productivity objectives, and performance expectations.[7] For example, a physician practice that receives most of its reimbursement on a *fee for service* basis may benefit from increasing the productivity incentive pay for individual physicians, while a physician practice that receives most of its reimbursement on a *capitation basis* may benefit from increasing the base salary for individual physicians.

Practitioner compensation is typically comprised of three (3) components: (1) *base salary* for the *tasks, duties, responsibilities,* and *accountabilities* related to the position; (2) *incentive pay* (e.g., productivity bonus, quality incentive bonus, signing bonus, retention bonus) for job performance; and (3) *benefits* (e.g., health insurance plans, educational expenses, life insurance plans, retirement benefits, paid time off).[8] The total amount of compensation allocated to these three components may be quantified in three (3) separate, yet related approaches: (1) *the modified point system*; (2) the *factor-comparison system*; and (3) the *XYZ system*.[9]

The *modified point system* uses a *bottom-up* approach based on the specific *tasks and duties* provided by a physician to a practice to quantify the *appropriate* amount of *compensation* using the following steps:[10]

(1) *Select job factors or characteristics* for the *practice's current jobs* based on: (a) skill (e.g., physician specialty); (b) responsibility (e.g., supervision of midlevel providers); (c) productivity (e.g., wRVU productivity and hours worked); and (d) seniority (e.g., years practicing medicine);
(2) *Construct a yardstick of values* for each job factor based on the *current level* of compensation for *each position* (e.g., Dr. Smith receives $150,000 per year which is allocated as follows: $40 per wRVU; $150 per hour for administrative and management services; and $80 per hour for restricted call services);
(3) *Evaluate all positions in terms of the job factors or characteristics* (e.g., Dr. Smith produces 5,000 wRVUs per year; Dr. Jones produces 6,000 wRVUs per year; and Dr. Doe produces 4,000 wRVUs per year);
(4) *Develop a wage standard* for each job factor based on both internal (e.g., the average compensation is $45 per wRVU for all practice physicians) and external benchmarks

6 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 9.
7 "Physician Compensation Strategies" By Craig Hunter and Max Reiboldt, 2nd Ed., Chicago, IL: American Medical Association, 2004, p. 53-54.
8 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 62.
9 "Principles of Personnel Management" By Edwin Flippo, 2nd Ed., New York: NY: McGraw-Hill, 1966, p. 283; "Designing a Physician Compensation and Incentive Plan for an Academic Healthcare Center" By Donna Steinmetz, Medical Group Management Association, 2006.
10 In a traditional point system, each job factor is assigned a point value relative to other tasks and then the total number of points is multiplied by a single compensation factor. However, due to the variety of tasks and duties performed by physicians a plethora of data exists that quantifies the perceived dollar value to market participants of each job factor. Therefore, rather than assigning a subjective point value to a particular task or duty, a modified point system assigns a dollar value directly to each job factor in determining the total amount of physician compensation. "Compensation" By Robert Sibson, Revised Ed., New York, NY: AMACON, 1981, p. 81.

(e.g., the average compensation is $50 per wRVU for all physicians of a specific specialty in a given locality);
(5) *Design the wage structure* to *standardize compensation* to align *job factors* with *organizational goals* (e.g., standardized compensation at $45 per wRVU for professional medical services or $125 per hour for administrative and management services); and
(6) *Adjust and operate the wage structure* for *each position* to *align individual incentives* with *organizational goals* (e.g., increase Dr. Smith's compensation from $40 per wRVU to $45 per wRVU to incentivize higher levels of clinical productivity).

The *factor-comparison system* uses a *top-down* approach based on the specific *accountabilities and responsibilities* assigned to a physician by a practice to quantify the *appropriate* amount of *compensation*. The *factor-comparison system* typically uses the following steps:[11]

(1) *Determine the job elements* required to *achieve* the *practice's current level of output* (e.g., 15,000 wRVUs per year; 520 hours of administrative and management services per year; and 2,080 hours of restricted call services per year);
(2) *Develop standard jobs* (e.g., staff physician or medical director) based on the *required job elements* (e.g., 5,000 wRVUs for a staff physician);
(3) *Construct compensation yardsticks* for *each standardized job* using both internal (e.g., the average compensation for internal medicine staff physicians in the subject practice is $200,000 per year) and external benchmarks (e.g., the average compensation is $230,000 per year for internal medicine staff physicians in a given locality);
(4) *Allocate compensation* to the *practice's positions* based on the *homogeneity* between *each position* and the *standard job compensation* (e.g., $150,000 for clinical staff physician services and $100,000 for administrative and management services for physician who provides both types of service);
(5) *Evaluate wage structure* to align *standardized jobs* with *organizational goals* (e.g., incentivizing a physician to spend more of his time providing clinical services);
(6) *Adjust and operate the wage structure* for *each position* to *align individual incentives* with *organizational goals* (e.g., incentivizing the physician with the best management skills to provide medical director services).

The most commonly used approach is a *combination system*, which utilizes parts of both the *modified point system* and *factor-comparison system* to allocate compensation between *job factors* and *job elements*.[12] An example of a *combination system* may be the *XYZ system*, where:[13]

$$\text{Total Salary} = X + Y + Z$$

The XYZ model is considered among the oldest and most commonly used compensation and incentive. [14]

11 "Principles of Personnel Management" By Edwin Flippo, 2nd Ed., New York, NY: McGraw-Hill, 1966, p. 292-293.
12 "Compensation" By Robert Sibson, Revised Ed., New York, NY: AMACON, 1981, p. 82-83.
13 "Designing a Physician Compensation and Incentive Plan for an Academic Healthcare Center" By Donna Steinmetz, Medical Group Management Association, 2006.
14 "Designing a Physician Compensation and Incentive Plan for an Academic Healthcare Center," by Donna Steinmetz, MSHA, FACMPE, the American College of Medical Practice Executives, Medical Group Management Association, September 2005; "Compensation and Incentive Plans for Physicians," by Charles Stiernberg, MD, MBA, November 2001, www.physicianspractice.com/ (accessed October 29, 2009).

In this formula, *X* is the fixed and guaranteed base compensation (e.g., *benefits* or physical presence in the office), *Y* represents a *position* specific compensation (e.g., staff physicians who also provide administrative and management services), and *Z* represents a variable, incentive-based salary component (e.g., wRVU productivity bonus).[15]

In addition to the systems discussed above, a number of peripheral circumstances may influence the total amount of compensation paid to any individual physician by a practice, including:

(1) Specialty-specific trends; [16]
(2) The practice dynamic and business structure;[17]
(3) An employee's individual productivity;[18]
(4) Quality outcomes;[19]
(5) Employee perceptions;[20]
(6) Geographic location;[21]
(7) Firm profitability;[22] or
(8) The four pillars of the healthcare industry (i.e., regulatory, reimbursement, competitive, and technological environments);

WHY?—IS A NEW COMPENSATION PLAN NEEDED?

If individual objectives are not aligned with the organization's business objectives,[23] a new compensation plan may be required. This misalignment may result from changes in either: (1) internal factors and/or (2) external factors. [24]

INTERNAL FACTORS

Healthcare enterprises may evaluate the alignment between their business objectives and their physician objectives based on several *internal factors*, including: (1) the existing level of practitioner compensation, (2) organizational size; (3) practice productivity; (4) financial standing; and (5) the *tasks, duties, responsibilities,* and *accountabilities* (TDRAs) for each practitioner.[25] The effectiveness of a physician compensation plan in aligning of individual

15 "Compensation and Incentive Plans for Physicians" By Charles Stiernberg, November 2001, http://www2.utmb.edu/otoref/Grnds/Compensation_11-2001/Compensation_11-2001.pdf (Accessed 04/30/10), p. 2.
16 "Physician's Compensation: Measurement, Benchmarking, and Implementation" by Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 26.
17 Ibid, p. 63-64
18 "Principles of Personnel Management" By Edwin Flippo, 2nd Ed., New York: NY: McGraw-Hill, 1966, p. 277
19 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 61
20 "Principles of Personnel Management" By Edwin Flippo, 2nd Ed., New York: NY: McGraw-Hill, 1966, p. 280
21 "Publication 535: Business Expenses" Internal Revenue Service, 2/12/2015, http://www.irs.gov/pub/irs-pdf/p535.pdf (Accessed 3/4/2015).
22 "Principles of Personnel Management" By Edwin Flippo, 2nd Ed., New York: NY: McGraw-Hill, 1966, p. 277
23 "The Fundamentals of Human Resource Management" By Paula Zeiner and Stephen Fournier, Charlotte, NC: Council on Education in Management, 2001, p. 1-4.
24 Ibid.
25 "Compensation" By Robert Sibson, New York, NY: AMACON, 1981, p. 233, 235-236, 238.

objectives with organizational objectives[26] may indicate a practice's location on *internal factor* spectrum.

If the majority of practitioners in an organization are content with the existing compensation structure, then, by and large, the compensation plan may have achieved goal congruence.[27] Alternately, if the practice–provider dynamic is extremely fragile and there exists a trend of unmet expectations, poor communication, and exclusion during the decision making process,[28] the compensation plan may not adequately align the practice's business objectives with individual physician's objectives. Practices may exhibit characteristics that fall anywhere between these two extremes and, therefore, tend to fall into one of three categories: (1) practices that *have adopted* a perfectly aligned compensation plan, which adjusts dynamically to continually align individual physician objectives with practice business objectives; (2) practices that *must seek* an alternative compensation plans; or (3) practices that fall somewhere in between, which could potentially benefit from a revised compensation plan but may not require a brand new compensation plan.[29]

It should be noted that all compensation plans should be evaluated based on the practice's *current* business objectives and, because of dynamic nature of business objectives, a compensation plan that *previously* succeeded in aligning a practice's *past* business objectives with individual physician objectives may not be sufficient to ensure *future* goal congruence.[30] For example, a practice that was previously reimbursed on a *fee for service* basis and structured its physician compensation plan based on individual physician wRVU productivity may require a revised compensation plan when joining an accountable care organization to align the individual physician objectives with the practice's business objectives.

EXTERNAL FACTORS (THE FOUR PILLARS)

In order to coexist symbiotically with an *evolving healthcare industry*, practices that wish to succeed will likely need a *dynamic physician compensation plan* that responds to *external factors*. As such, practices should assess the current (and projected) success or failure of a physician compensation plan in light of changes in the four pillars of the healthcare industry (i.e., regulatory, reimbursement, competition, and technology). Generally speaking, practices may want to review their existing compensation plan to ensure continued goal congruence in light of economic and demographic changes in the physician workforce, the patient population, patient health outcomes, community needs,[31] healthcare delivery (e.g., telemedicine), or new reimbursement schemes (e.g., shared savings programs).

26 "Merritt, Hawkins, & Associates Guide to Physician Recruiting" By James Merritt, et al, Irving, TX: Merritt, Hawkins, & Associates, 2009, p. 19-20.
27 "Case for Linking Clinical Performance to Compensation" By Al Truscott in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 138.
28 "Merritt, Hawkins, & Associates Guide to Physician Recruiting" By James Merritt, et al, Irving, TX: Merritt, Hawkins, & Associates, 2009, p. 14-15.
29 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 9-10.
30 "The Fundamentals of Human Resource Management" By Paula Zeiner and Stephen Fournier, Charlotte, NC: Council on Education in Management, 2001, p. 1-4.
31 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 24-25.

Key Regulatory Considerations

As discussed extensively in Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars*, the federal and state regulation of the corporate practice of medicine, fraud and abuse, licensure, insurance, and other aspects of healthcare professional practice typically has significant bearing on an organization's compensation arrangements.[32] Violations of these laws may result in civil or criminal penalties (e.g., fines for impermissible remuneration).[33]

Fraud and Abuse

Fraud and abuse, as it relates to physician compensation, is regulated through a body of laws, among the most notable being the Stark law, the False Claims Act, and the Anti-Kickback statute.[34]

The Stark Law

The Stark laws[35] prohibit referral of designated health services (DHS) for Medicare and Medicaid patients to entities (e.g., hospitals, physician groups, independent contractors, and clinical laboratories) that are owned by, or have affiliation with, a referring physician.[36] Permissible physician or practitioner compensation arrangements must comply with the exceptions listed under Stark law.[37] In addition to the federal Stark laws, many states have promulgated their own self-referral legislation.[38] For a list of states with self-referral legislation, see Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars*.

False Claims Act (FCA)

Another enforcement measure used to combat healthcare fraud and abuse is the federal False Claims Act (FCA). The FCA primarily targets fraudulent reimbursement claims (e.g., upcoding or billing for unnecessary services).[39] Additionally, Stark law and Anti-Kickback statute violations may serve as a gateway for pursuing FCA liability.[40]

Anti-Kickback Statute

The Anti-Kickback statute forbids offering, soliciting, or paying remuneration in exchange for the referral of federally funded patient services.[41] Enforcement agencies as well as the federal

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32 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 32.
33 "Medicare & Medicaid Patient & Program Protection Act of 1987" Pub. L. 100-93, §§ 3-4, 101 Stat. 680, 686 (August 18, 1987).
34 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 37.
35 Detailed in Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars*.
36 "Limitation on Certain Physician Referrals" 42 U.S.C. 1395nn(a)(1)(A) (2012).
37 "Exceptions to the Referral Prohibition Related to Compensation Arrangements" 42 C.F.R. § 411.357 (October 1, 2014); for more information related to the Stark exceptions, see Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars*.
38 "Health Care Fraud: Enforcement and Compliance" By Robert Fabrikant, et al., New York, NY: Law Journal Press, 2007, p. 2-62- 2-64.
39 "Fraud Enforcement and Recovery Act of 2009" Pub. L. 111-21, § 4, 123 Stat. 1617, 1621 (February 5, 2009); "What is the False Claims Act and Why is it Important?" The False Claims Act Legal Center, 2009, http://www.taf.org/whyfca.htm (Accessed 09/8/09).
40 "Anti-Kickback Statute and the Stark Law" Bernstein Liebhard LLP, http://www.bernlieb.com/whistleblowers/Anti-Kickback-Statute/index.html (Accessed 3/31/2015); see Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars*.
41 "Criminal Penalties for Acts Involving Federal Health Care Programs" 42 U.S.C. § 1320a-7b(b) (2014); detailed in Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars*.

courts have found the Anti-Kickback statute to be broadly applicable. The Office of the Inspector General (OIG) adopted the *one purpose test,* which states that if only *one motive* (or purpose) of an arrangement is to induce referrals, the *entire* arrangement violates the Anti-Kickback statute.[42] Because many legitimate business arrangements may be affected, safe harbors and exceptions to the Anti-Kickback statute have been issued that describe compensation arrangements that may be permissible under the Anti-Kickback statute.[43] In addition to incorporating the *one purpose test*, the OIG routinely issues an advisory publication, "Special Fraud Alerts," which highlights questionable arrangements.[44] A common mandate enforced by all of the safe harbor provisions is that physicians or practitioners be compensated *at or below fair market value* rates and that the compensation arrangement is *commercially reasonable*.[45] Compensation rates that ***exceed*** *fair market value* or are ***not*** *commercially reasonable* ***may*** be evidence of *payments for referrals*.[46] These presumed violations of the Anti-Kickback statute may result in civil penalties.[47]

Internal Revenue Service (IRS) Governance of Compensation

The Internal Revenue Service (IRS) requires that arrangements between tax-exempt, not-for-profit enterprises and taxable entities not exceed the *fair market value* of the subject property interest and must be *commercially reasonable*.[48] Compensation rates that ***exceed*** *fair market value* or are ***not*** *commercially reasonable* ***may*** be evidence of *private inurement of benefit*.

The *Internal Revenue Code (IRC)* provisions outline the tax-related implications of: (1) the tax treatment of the compensation methodology (e.g., independent contractor compensation versus employee compensation); (2) compensation methodologies themselves (e.g., including a percentage of operating profits as incentive pay); and (3) compensation plan infrastructure (e.g., the mix of base salary and incentive pay).[49] Healthcare professional practices are subject to different tax scenarios depending on the type of business structure (as defined and discussed in Chapter 5*: Organizational Structure*) they embody, which may include:[50]

(1) Sole proprietorships;
(2) Professional partnerships;
(3) Professional corporations (Subchapter S corporation or Subchapter C corporations);
(4) Limited liability partnerships; and
(5) Limited liability companies.

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42 "United States of America v. A. Alvin Greber" 760 F.2d 68, 69 (April 30, 1985).
43 "Exceptions" 42 C.F.R. § 1001.952 (2013); for a list of safe harbors and exceptions, see Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars*.
44 "Special Fraud Alerts" Office of Inspector General, Department of Health and Human Services, Fed. Reg. Vol. 65 No. 194, (December 19, 1994), p. 59434.
45 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 147; see Chapter 4: *Financial Valuation of Enterprises, Assets, or Services.*
46 "American Lithotripsy Society v. Thompson" 215 F.Supp.2d 23, 27 (D.D.C. July 12, 2002).
47 "Medicare & Medicaid Patient & Program Protection Act of 1987" Pub. L. 100-93 § 2, 101 Stat. 680, 680-684 (August 18, 1987); "Medicare and State Health Care Programs: Fraud and Abuse OIG Safe Harbor Provisions" Federal Register Vol. 56 (July 29, 1991), p. 35952.
48 "Excess Benefit Transaction" 26 C.F.R. § 53.4958-4(b)(i) (2012); "Excess Benefit Transaction" 26 C.F.R. § 53.4958-4(b)(ii)(A) (2012); "Taxes on Excess Benefit Transactions" 26 U.S.C. § 4958 (2012); see Chapter 3: *Regulatory Environment* of Volume I: *An Era of Reform—The Four Pillars;* for a list of several specific factors used to determine the *fair market value* and *commercial reasonableness* of a physician compensation arrangement, see Chapter 4: *Financial Valuation of Enterprises, Assets, or Services*.
49 "A Guide to Buying Physician Practices" By George Bodenger, et al, Washington, DC: Atlantic Information Service, 1995, p. 71. 75-76.
50 "S Corp, C Corp, LLC, LLP which is best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse.act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09).

It should be noted that C-corporations consist of both *for-profit taxable entities* and *not-for-profit tax-exempt entities*.

As a result of the Patient Protection and Affordable Care Act, not-for-profit hospitals must satisfy additional reporting requirements (e.g., Community Health Needs Assessments) to maintain their tax-exempt status.[51] In order to demonstrate continued compliance, entities should document their compliance programs and procedures and use third-party consultants to: (1) routinely assess their compensation rates against current benchmarking data; (2) determine whether the compensation exceeds *fair market value*; and (3) analyze the *commercial reasonableness* of their compensation plans.[52]

Key Reimbursement Considerations

Because physician compensation may contribute considerably to the financial dynamic of healthcare professional practices, changes in healthcare reimbursement methodologies may cause practices to revisit their compensation plans.[53] Aligning physician compensation plans with reimbursement instruments reinforces fiscal solidarity and incentivizes physicians to generate revenue for the practice.[54]

Traditionally, public and private payors have *reimbursed* physician practices for *each service provided* to a particular patient (i.e., *fee for service* reimbursement) based on a standardized payment schedule.[55] Beginning in the 1970s, health maintenance organizations (HMOs)[56] introduced a new form of reimbursement called *capitation*, a *pre-paid reimbursement method* that reimburses providers a set price for providing medical services to a *defined population* for a *defined set of services*.[57] Both of these reimbursement models failed to incentivize patient *outcomes* and created conflicting incentives for healthcare enterprises; the *fee-for-service* model incentivizes *high utilization levels regardless of outcomes* while the *capitation* model incentivizes *low cost regardless of outcomes*. As a result, healthcare third-party payors are shifting to *pay-for-performance* reimbursement models based on patient *outcomes* as a way to foster *high quality, low cost* healthcare services.[58] While the exact reimbursement mechanisms differ by model, in general, *pay-for-performance* reimbursement models pay a variable amount based on the *"achievement of specific clinical and practice efficiency measures."*[59]

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51 "Patient Protection and Affordable Care Act" Pub. L. No. 111-148, § 9007, 124 Stat. 119, 855 (2010).

52 "Enforcement Efforts Take Aim at Executive Compensation of Tax-Exempt Health Care Entities" By Candace L. Quinn and Jeffrey D. Mamorsky, 18 Health Law Reporter 1640, (December 17, 2009) http://news.bna.com/hlln/display/batch_print_display.adp (Accessed 12/28/09).

53 "Physician Compensation Arrangements: Management and Legal Trends" By Daniel Zismer, Gaithersburg, MD: Aspen Publishers, 1999, p. 24-25; see Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars.*

54 "Physician Compensation Strategies" By Craig Hunter and Max Reiboldt, 2nd Ed., Chicago, IL: American Medical Association, 2004, p. 107.

55 "How Does Your Doctor Get Paid? The Controversy Over Capitation" By Mark Hagland, Frontline, 2014, http://www.pbs.org/wgbh/pages/frontline/shows/doctor/care/capitation.html (Accessed 3/5/2015).

56 "HMO Enrollment's Downward Trend" By Debra A Donahue, March 29,2009, http://www.markfarrah.com/healthcare-business-strategy/HMO-Enrollment's-Downward-Trend.aspx (Accessed 6/18/14); see Chapter 1: *Historical Development* of Volume I: *An Era of Reform—The Four Pillars*.

57 "Capitation Models" Health Care Incentives Improvement Institute, 2012, www.hci3.ord/content/capitation-models (Accessed June 17, 2014); see Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars*.

58 "Medicare to Rework Billions in Payments: HHS Secretary Burbell Wants 50% of Payments Based on Performance by End of 2018" By Louise Randofsky and Melinda Beck, Wall Street Journal, http://www.wsj.com/articles/medicaretoreworkbillionsinpayments1422293419 (Accessed 3/5/2015).

59 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 129; see Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars*.

Quality Incentive Payments

Quality incentive payments are *single lump payments* (or the withholding of reimbursement) for the *achievement* (or failure) of *certain clinical measures* and may (or may not) be paid *independent* of the practice's *procedure volume*. Examples of *quality inventive payments* include withholding payment for *never events,* BCBS *Alternative Quality Contract* payments, and *physician value based payment modifier adjustments.*[60]

Shared Savings Payments

Shared savings payments are annual payments from payors to physician practices for achieving lower payor costs per patient in a *fee for service* reimbursement model, subject to the physician practice *maintaining* certain quality metrics. Examples include the *Medicare shared savings program* and *commercial accountable care organizations*.[61]

Bundled Payments

Bundled payments are *per patient* payments from payors to healthcare service providers to treat a *single diagnosis*; any savings (costs overruns) achieved accrue (are borne by) to the service provider and are *not* shared with the payor. An example of a *bundled payment* model is the *Medicare Bundled Payments for Care Improvement Initiatives*.[62]

Key Competition Considerations

The ACA's *individual mandate*,[63] as well as the demographic time bomb resulting from the aging U.S. population[64] may result in a physician manpower shortage in the U.S.[65] In 2010, prior to the passage of the ACA, there was a shortage of 13,700 physicians across all specialties.[66] In 2015, following the implementation of the ACA, this gap increased to up to 19,900 physicians.[67] The physician manpower shortage is expected to worsen through 2025 with *non-surgical specialists* projected to experience a shortage of 5,100 to 12,300 physicians, *surgeons* projected to experience a shortage of 23,100 to 31,600 physicians, and *primary care physicians* projected to experience a shortage of 12,500 to 31,100 physicians.[68] This gap between physician supply and demand may increase *competition between physicians* and *competition between midlevel providers and physicians*.

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60 For additional examples see Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars*.
61 See Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars.*
62 See Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars.*
63 "Patient Protection and Affordable Care Act" Pub. L. 111-148, § 1501, 124 Stat. 119, 242 (March 23, 2010).
64 "Older Population by Age Group: 1900 to 2050 with Chart of the 65+ Population" U.S. Administration on Aging, Department of Health and Human Services, June 23, 2010, http://www.aoa.gov/AoARoot/Aging_Statistics/future_growth/future_growth.aspx#age (Accessed 6/25/2012); "Older Population as a Percentage of the Total Population: 1900 to 2050" U.S. Administration on Aging, Department of Health and Human Services, June 23, 2010, http://www.aoa.gov/AoARoot/Aging_Statistics/future_growth/docs/By_Age_Total_Population.xls (Accessed 6/25/10).
65 See Chapter 4: *Impact of Competitive Forces* in Volume I: *An Era of Reform—The Four Pillars*.
66 "The Impact of Health Care Reform on the Future Supply and Demand for Physicians Updated Projections Through 2025" Association of American Medical Colleges, June 2010, https://www.aamc.org/download/158076/data/updated_projections_through_2025.pdf (Accessed 8/14/12).
67 "The Complexities of Physician Supply and Demand: Projections from 2013 to 2025" By IHS, Washington, DC: Association of American Medical Colleges, March 2015, p. 41.
68 Ibid.

Competition Between Physicians

Competition between physician practices has increased with greater access to specialists and technological advancements, especially practices providing *ancillary services and technical component* (ASTC) *services*, e.g., diagnostic imaging.[69] The advent of ACOs under the *Medicare Shared Savings Program* (MSSP) *Final Rule*, which governs Federal ACOs, is also likely to increase competition among physician providers.[70] As discussed in Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars*, under the MSSP, if a Medicare beneficiary receives their primary care services from a *specialist*, that specialist is considered a *primary care physician* for the purposes of *beneficiary assignment* to the ACO.[71] In addition, these *specialists* are restricted to only participating in one ACO per *tax identification number* (TIN), an *exclusivity requirement* generally reserved for *primary care physicians*.[72]

In addition to competition between *physician specialties*, competition for the employment of *physicians* has also increased. Since 2003, the number of physicians in *hospital-based practices* has increased significantly from 162,037 physicians (18.6 percent of active physicians) in 2003 to 208,982 physicians (20.0 percent of active physicians) in 2013, while the number of physicians in *office-based practices* has declined, from 529,836 physicians (60.8 percent of active physicians) in 2003 to 600,863 physicians (57.4 percent of active physicians) in 2013.[73]

Independent practitioners and *small group practices* are increasing their *alignment* with *hospitals* due reduced profitability caused by the *downward pressure on reimbursement rates* and *economic changes,* e.g., the *Great Recession*.[74]

Competition with Mid-level Providers

In addition to competition among physician providers, there is also likely to be increased competition among *physicians* and *mid-level providers*, as the *scope of services* these non-physician practitioners may perform continues to expand.[75] An increased growth in patient demand for healthcare services along with the lagging shortage of physicians has resulted in increased volumes of *non-physician practitioners* providing heretofore traditionally physician services.[76] For example, there has been an increase in the utilization of emergency department *nurse practitioners* and *physician's assistants*, which has reportedly been acceptable to patients, as providing quality care, thereby alleviating the *volume-induced pressure* placed on emergency departments and allowing for improved patient satisfaction and shorter wait times.[77] Several studies have indicated that a *physician assistant* can perform approximately 80 percent of the

69 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley and Sons, 2014, p. 438.
70 Ibid.
71 "Medicare Program; Medicare Shared Savings Program: Accountable Care Organizations" Federal Register Vol. 76, No. 212 (November 2, 2011), p. 67867.
72 Ibid, p. 67811.
73 "Physician Characteristics and Distribution in the US: 2005 Ed." By Thomas Pasko and Derek Smart, Chicago, IL: American Medical Association, 2005, p. 311; "Physician Characteristics and Distribution in the US: 2015 Ed.," By Derek Smart, Chicago, IL: American Medical Association, 2015, p. 440.
74 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley and Sons, 2014, p. 439.
75 See Chapter 3: *Regulatory Environment* of Volume 1: *An Era of Reform—The Four Pillars.*
76 "The US dermatology workforce: A specialty remains in shortage" By Alexa Boer Kimball, MD, MPH and Jack S. Resneck, Jr., MD, Journal of the American Academy of Dermatology, Volume 59, Number 5, (November 2008), p. 742
77 "Trends in Midlevel Provider Utilization in Emergency Departments from 1997 to 2006" By Michael D. Menchine, MD, MPH; Warren Wiechmann MD, MBA; and Scott Rudkin, MD, MBA, the Society for Academic Emergency Medicine, Volume 16, Number 10, (October 2009), p. 963, 966-967.

services typically provided by a *primary care physician*.[78] As the shortage of physicians continues to grow, midlevel providers may relieve some of the competitive pressures between physician practices.

Key Technology Considerations

The growth in both *management* and *clinical* technology has transformed the practitioner performance dynamic[79] and, as such, it should be considered when determining the physician compensation methodology.[80] *Management technologies* are the: (1) the *software* and *devices* used by providers to organize *patient encounters*, *charge entry*, and the *billing process,* as well as (2) the *processes* and *procedures* that support these efforts.[81] *Management technology* includes: (1) *computerized physician order entry* (CPOE); (2) *billing* software components; (3) *electronic health records* (EHRs);[82] (4) accounting software; and (5) enterprise resource planning (ERP) software. *"Clinical technology* encompasses any *method* or *device* utilized for *patient treatment procedures."*[83] *Clinical technology* includes: (1) *minimally invasive techniques*; (2) *pharmaceuticals*; and (3) *surgical devices*.[84]

WHEN?—THE COMPENSATION PLAN LIFE CYCLE

PHASE 1: THE EXISTING PLAN

The existing compensation methods employed by many practices that seek to reevaluate their remunerative strategies are often rooted in their historical compensation plans.[85] The original compensation plan may no longer suffice to meet the needs of the professionals employed by or affiliated with the organization[86] as the practice grows in size and complexity. Naturally, practices and their employees grow accustomed to the ingrained culture of the organization and, despite the degree of unrest or dissatisfaction that may exist, they will, at least, struggle to identify the need for change—if not resist it entirely. When a compensation plan fails to align individual objectives with overall business objectives[87] due to changes in the *Internal Factors* and *External Factors (The Four Pillars),* discussed earlier in this chapter, the practice may need to pursue a more appropriate means of compensating its physicians and other healthcare professionals.

78 "Physician Assistant profession (PA)" By Linda J. Vorvick, U.S. National Library of Medicine, August, 12, 2011, http://www.nlm.nih.gov/medlineplus/ency/article/001935.htm (Accessed 12.18.2012).
79 "Paying Physicians: Options for Controlling Cost, Volume, and Intensity of Services" By Mark V. Pauly, et al., Ann Arbor, MI: Health Administration Press, 1992, p. 31
80 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth Hekman, New York, NY: McGraw-Hill, 2000, p. 77.
81 "Healthcare Valuation: The Four Pillars of Healthcare Value" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 1, Hoboken, NJ: John Wiley & Sons, 2014, p. 539.
82 Ibid.
83 "Healthcare Valuation: The Four Pillars of Healthcare Value" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 1, Hoboken, NJ: John Wiley & Sons, 2014, p. 577.
84 Ibid.
85 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p 40-41.
86 "Labor Economics & Labor Relations" By Lloyd Reynolds, et al., 10th Ed., Englewood Cliff, NJ: Prentice-Hall, 1991, p. 186.
87 "Modern Labor Economics: Theory and Public Policy" By Ronald Ehrenberg and Robert Smith, 11th Ed., Boston, MA: Prentice Hall, 2012, p. 363.

PHASE 2: THE POTENTIAL PLAN: THE DEVELOPMENT TIMELINE

Larger or more complex practices typically may expect a longer timeline to implement organizational changes, such as a revised compensation plan, than the average practice.[88] However, for most practices, three to six months may serve as an objective benchmark for the duration of the typical compensation plan development process.[89] *Designing* a compensation plan may take *between three* and *six months* to complete (nine months for larger practices) and *implementing* a new plan typically requires an additional *three months*.[90] If the practice is experiencing financial distress, or if it is out of legal compliance, the redesign process may need to be expedited. In general, timelines that are longer than these standard durations are indicative of deeper problems.[91] In these instances, and depending on the specific circumstances, it may be beneficial for practices to seek outside consulting advice.[92]

PHASE 3: THE NEW PLAN

Depending on the magnitude of change needed and the ways in which the practice employees and affiliates receive the proposed change, transitioning into and implementing a new compensation plan in its entirety may take months longer than expected.[93] If there is a lack of willingness by the healthcare entity to commit the resources necessary to implement the proposed plan,[94] *organizational structure*, *culture*, and *managerial accounting systems* can be extremely difficult to change. Also, physician perceptions and attitudes attributed to an old system might be difficult to relinquish and may persist long after the new plan is put in place. Typically, it can take between three and five years for such issues to subside, although some practices may endure even longer periods of unrest. [95]

HOW?—TEN STEPS TO DEVELOPING A COMPENSATION PLAN

Although the mechanical details of the development process may vary due to the diverse array of practice types and provider arrangements, the typical development process may include the ten steps discussed in the following sections.[96]

88 "Advantages Small Companies Have Over Large Companies" By Kermit Burley, Houston Chronicle, 2015, http://smallbusiness.chron.com/advantages-small-companies-over-large-companies-23667.html (Accessed 3/26/2015).
89 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 19.
90 Ibid.
91 Ibid, p. 19-20.
92 Ibid, p. 19-20.
93 Ibid, p. 19.
94 "Merritt, Hawkins, & Associates Guide to Physician Recruiting" By James Merritt, et al, Irving, TX: Merritt, Hawkins, & Associates, 2009, p. 21.
95 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 41.
96 Ibid, p. 24.

STEP 1: DETERMINING GOVERNANCE, GOALS, AND PRINCIPLES

Before a practice attempts to identify existing problems and potential solutions, certain foundational decisions should be made, specifically: (1) who will be included in this decision making process and in what capacity; (2) what specific goals or objectives must be central to the process; and (3) what principles must shape the development process and drive all of the decisions that are made through to the implementation of an improved compensation plan.[97]

Governance Options

When physicians and other providers within the practice play a significant role in the decision making process, positive results from compensation plans development are more likely to occur,[98] although alternative development options are available to the practice. Although practices may seek assistance from external resources (i.e., attorneys, CPAs, and consultants), awareness, concern, support, and commitment from a strong group of practitioners is considered instrumental to the implementation and long-lived success of a new compensation plan.[99] Practices have several options when choosing ownership *and* oversight of the compensation development process; they may choose to adopt one method or choose a combination of several.[100] Some organizations may choose to take a *top down* approach to developing a new plan, wherein the decision lies in the hands of management or a governing board.[101] Other practices may wish to employ a *bottom up* approach, electing physicians to research alternatives to the existing compensation system.[102] One common development strategy is the appointment of a compensation planning committee.[103] Both physician and non-physician consultants may be recruited to facilitate the process. These consultants may function as part of a planning committee or independently throughout the process.

The Compensation Planning Committee

A *compensation planning committee* is responsible for overseeing and executing the remaining steps in the compensation planning process.[104] Compensation planning committees are usually a collection of practice members that are representative of the practice population as a whole; physician executives and practitioners of all levels and specialty areas are appointed to mirror the practice distribution.[105]

97 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 59-61, 133-138.
98 "Merritt, Hawkins, & Associates Guide to Physician Recruiting" By James Merritt, et al, Irving, TX: Merritt, Hawkins, & Associates, 2009, p. 14.
99 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 133-138.
100 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 18.
101 Ibid.
102 Ibid.
103 "Compensation Committee Guide" By J.E. Richard, 9th Ed., Half Moon Bay: CA, Executive Compensation Institute,, 2012, p. 44.
104 "Compensation Committee Guide" By J.E. Richard, 9th Ed., Half Moon Bay: CA, Executive Compensation Institute,, 2012, p. 19-20, 22.
105 "Physician Compensation Strategies" By Craig Hunter and Max Reiboldt, 2nd Ed., Chicago, IL: American Medical Association, 2004, p. 62.

The Consultant's Role

Consultants, in this context, provide any third-party assistance to the development process, addressing topics including, but not limited to, administration, human resources consulting, accounting, and legal consulting.[106] In general, the role of a consultant may include such tasks as:[107]

(1) Aiding in the evaluation of the existing system, identifying strengths, as well as opportunities for improvement;
(2) Offering knowledge and experience related to the various arrangements and alternatives available;
(3) Identification of potential problems and suggest solutions;
(4) Creating the materials needed for communicating or presenting proposed plan(s); and
(5) Launching the decision making process.

Setting Goals—Target Objectives

Establishing goals for the development process should be instrumental to the remaining steps and are intended to reflect the practice's culture, existing strategy, and future aspirations.[108] Although the specific individual physician objectives of a practice's compensation plan will be unique, goal congruence generally occurs when the following are incentivized:[109]

(1) Encouraging productivity;
(2) Reinforcing involvement in professional services, ancillary practices, outreach, leadership, and other diverse and potentially nonclinical roles;
(3) Encouraging teamwork and group solidarity; and
(4) Ensuring that compensation and reimbursement methodologies complement each other.

Developing Principles—Ideal Characteristics

The governing members of the development process should choose certain design principles; the principles typically represent those characteristics that the members hope will resonate from their eventual design.[110] Again, successful compensation plans are typically characterized by certain mainstream qualities, such as:[111]

(1) Appropriate weighting of individual and team accountability and responsibility;
(2) A concise number of performance metrics;
(3) Clear and simple processes, expectations, repercussions, and objectives;

106 "Compensation Committee Guide" By J.E. Richard, 9th Ed., Half Moon Bay: CA, Executive Compensation Institute,, 2012, p. 22, 30, 34, 36.
107 "Healthcare Consultant: Job Description, Duties, and Requirements" Study.com, 2015, http://study.com/articles/Healthcare_Consultant_Job_Description_Duties_and_Requirements.html (Accessed 4/1/2015).
108 "Compensation Committee Guide" By J.E. Richard, 9th Ed., Half Moon Bay: CA, Executive Compensation Institute, 2012, p. 56.
109 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, MO: Mosby-Year Book, 1998, p. 125-129.
110 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 28.
111 "Wage Incentive Methods: Their Selection, Installation, and Operation" By Charles Lytle, New York, NY: The Ronald Press Company, 1942, p. 71-73.

(4) Clearly defined and methodically enforced processes, expectations, repercussions, and objectives;
(5) Transparent documentation, communication, and enforcement;
(6) A flexible transition plan from current to future practices; and
(7) Financial control.

STEP 2: INVESTIGATING THE AVAILABLE OPTIONS

The key to this step is ensuring that the plan committee, or other governing entity, is sufficiently educated on the matters of healthcare structures, dimensions, and trends as they relate to the practice in question. To ensure that proposed plans *align individual physician goals* with *practice organizational objectives*, this step must involve analyzing potential compensation plan(s) in light of existing *internal* and *external factors*,[112] as well as weighing the *organizational structure*, the *culture*, and the *managerial accounting system* dimensions

Compensation Plan Alignment

Internal Factors: Aligning with the Practice's Goals and Principles

As previously discussed, in order to avoid settling on a plan that fails to align individual physician goals with the practice's business objectives, the available options should to be limited to only those plans that may achieve goal congruence.[113] Important internal factors include such considerations as:[114]

(1) The expected productivity of each individual;
(2) The profitability of the organization; and
(3) The perceptions of each individual.

In addition, the TDRAs associated with the services rendered by the physician may also be an important internal consideration.[115]

External Factors: Aligning With the Environment

Understanding the external factors that could potentially affect the implementation of a new compensation plan is of similar significance as understanding the external indicators that suggest the need for a new plan in the first place. Important external factors include changes in the four pillars (i.e., regulatory, reimbursement competition, and technology) of healthcaresuch considerations as:[116]

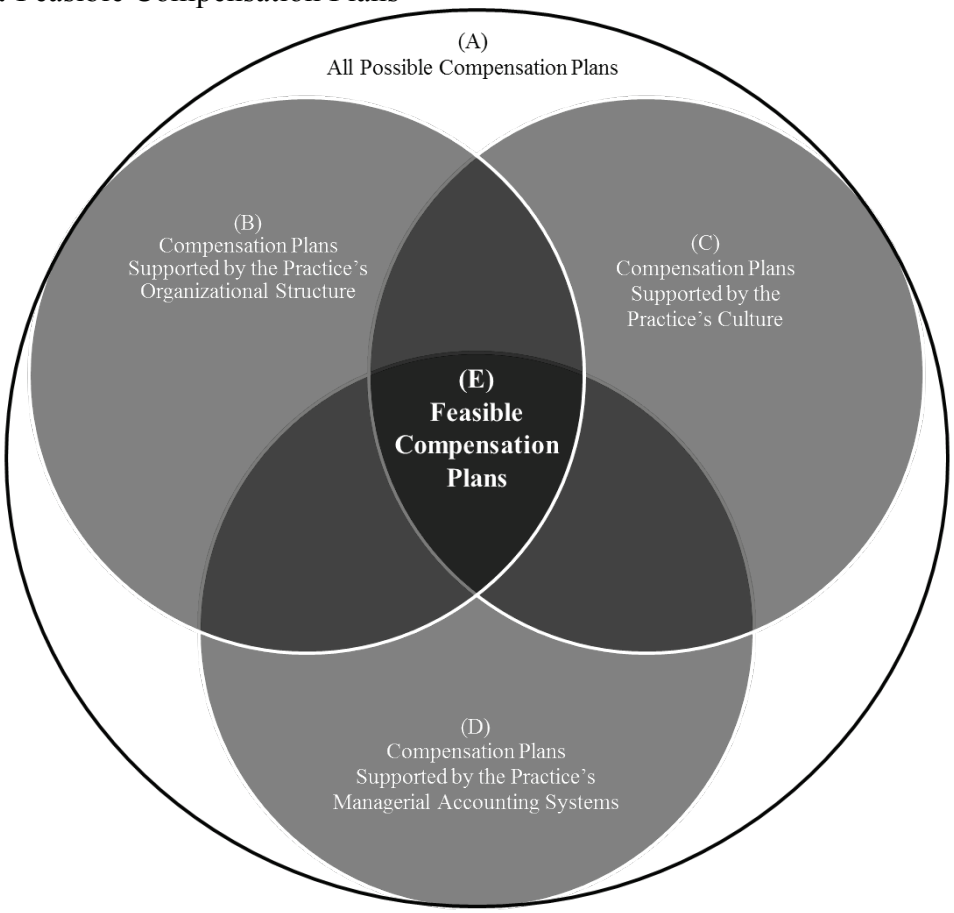
112 "Merritt, Hawkins, & Associates Guide to Physician Recruiting" By James Merritt, et al, Irving, TX: Merritt, Hawkins, & Associates, 2009, p. 19-20.
113 "Compensation" By Robert Sibson, Revised Ed., New York, NY: AMACON, 1981, p. 26-27.
114 "Principles of Personnel Management" By Edwin Flippo, New York, NY: McGraw-Hill, 1966, p. 277; "The Fundamental of Human Resource Management" By Paula Zeiner and Stephen Fournier, Charlotte, NC: Council on Education in Management, 2001, p. 4-5.
115 See the *Why?-Is a New Compensation Plan Needed?* section for further guidance on internal factors in which alignment may be beneficial.
116 "A Guide to Buying Physician Practice" By George Bodenger, et al., Washington, DC: Atlantic Information Services, 1995, p. 72, 75; see *External Factors [The Four Pillars]* .

(1) Supply of physicians of similar specialty, skill, experience, and knowledge level in the subject practice's market service area;
(2) The rates of practitioner compensation seen in the healthcare market;
(3) The cost of living in the area; and
(4) Changes to reimbursement, health plans, or other financial drivers of the market.[117]

Spectrum of Physician Compensation Plans: The Impact of Organizational Structure, Culture, and Managerial Accounting Systems

In addition to the *internal* and *external factors* that may be beneficial to consider when evaluating various available plan options, *organizational structure*, *culture*, and *managerial accounting* dimensions are often significant components of the basic infrastructures from which compensation plans can be derived. These dimensions are *interrelated* and can be evaluated against each other to determine the feasible compensation plans from which the compensation plan to be utilized is selected (see Figure 3-2: *Feasible Compensation Plans*).

Figure 3-2: Feasible Compensation Plans

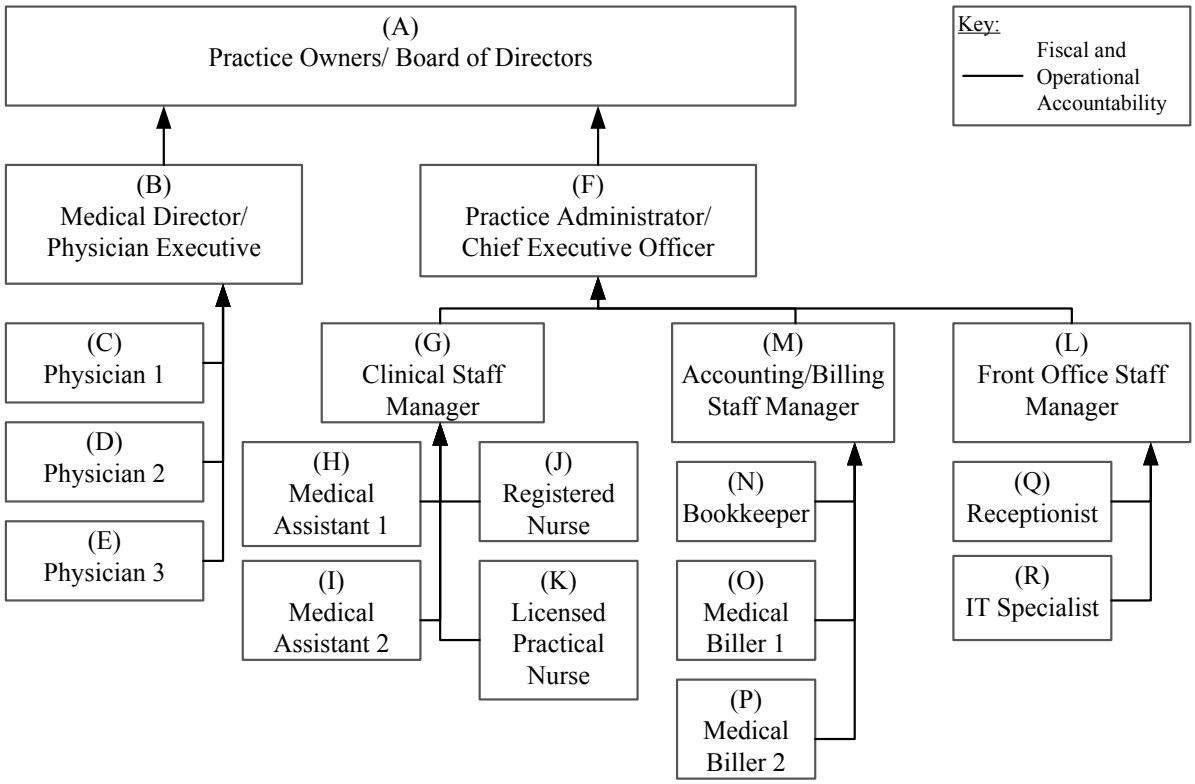


117 See the *Why?-Is a New Compensation Plan Needed?* section for further guidance on external factors in which alignment may be beneficial.

Organizational Structure Dimensions

Organizational structure is the *formal* means by which a practice delegates authority, divides labor, and coordinates activities.[118] Most businesses tend to fall into one of *three basic organizational structures*: functional structures, market-oriented structures, and integrated structures. *Functional structures* assign fiscal and operational TDRAs "…based on major categories of work"[119] *Functional structures* tend to *build extensive expertise* in *the functional area,*[120] and *avoid redundancy* and *reduplication of TDRAs*. However, due to the *limited interaction* between functional areas, *communication* between different departments may be limited, resulting in a dysfunctional organization.[121]

Figure 3-3: Functional Structure for a Physician Practice

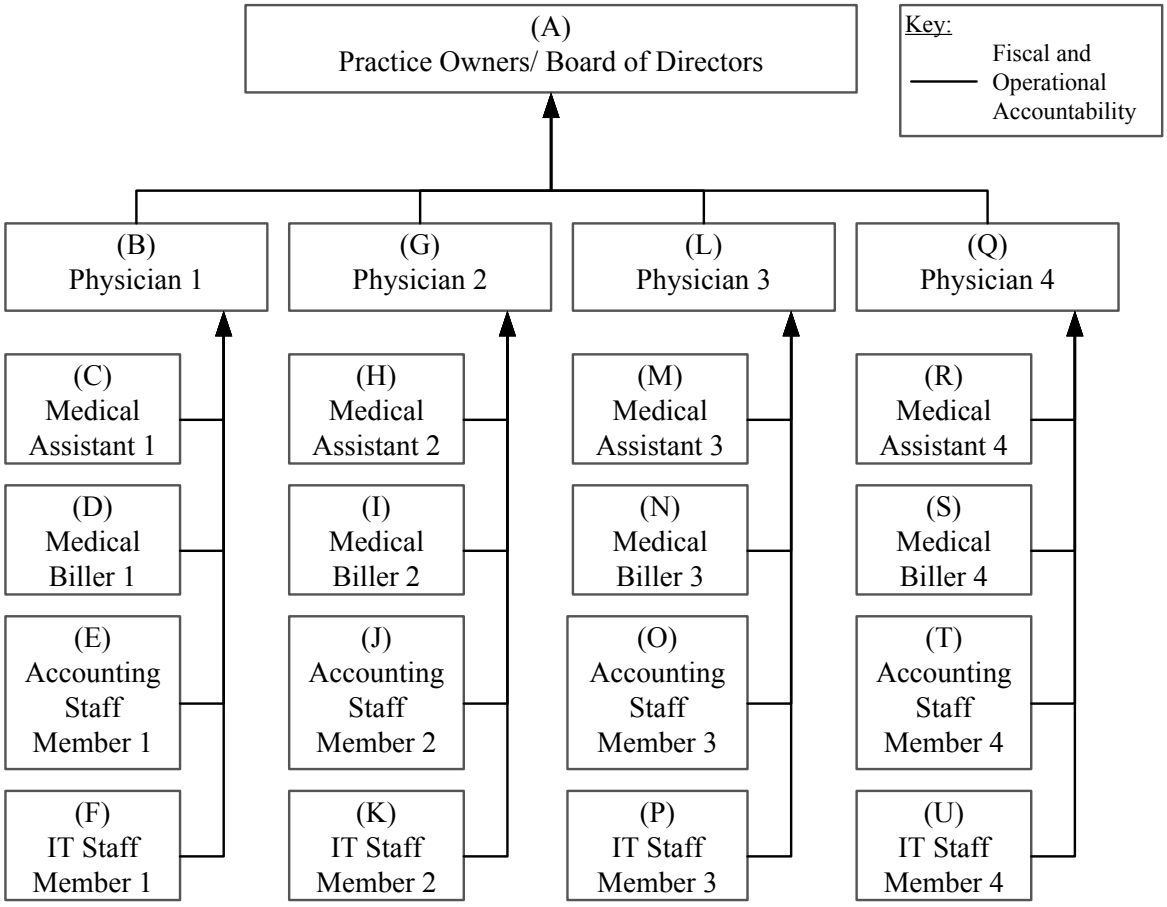


Market-oriented structures assign fiscal and operational TDRAs based on the *patients* served by *each* of the practice's *physicians*.[122] *Market-oriented structures* tend to *build extensive expertise* in *the particular market served* and *encourage collaboration* between different functional

118 "Organizational Theory: Modern, Symbolic, and Postmodern Perspectives" By Mary Jo Hatch, New York, NY: Oxford University Press, 1997, p. 164-166.
119 "Organizational Behavior: A Diagnostic Approach" By Judith Gordon, 7th Ed., Upper Saddle River, NJ: Prentice Hall, 2002, p. 405; see Figure 3-3: *Functional Structure for a Physician Practice*.
120 "Understanding and Managing Organizational Behavior" By Jennifer George and Gareth Jones, 2nd Ed., Reading, MA: Addison-Wesley Publishing Company, 1999, p. 532.
121 "Organizational Behavior: The Management of Individual and Organizational Performance" By David Cherrington, Needham Heights, MA: Allyn and Bacon: 1989, p. 517-518.
122 "Understanding and Managing Organizational Behavior" By Jennifer George and Gareth Jones, 2nd Ed., Reading, MA: Addison-Wesley Publishing Company: 1999, p. 534; see Figure 3-4: *Market-Oriented Structure for a Physician Practice*.

areas.[123] However, due to the need for functional area experts for each physician, *redundancy* and *reduplication* of TRDAs may *occur*, resulting in a *loss of economies of scale* and a *higher* level of *operating expenses*.[124]

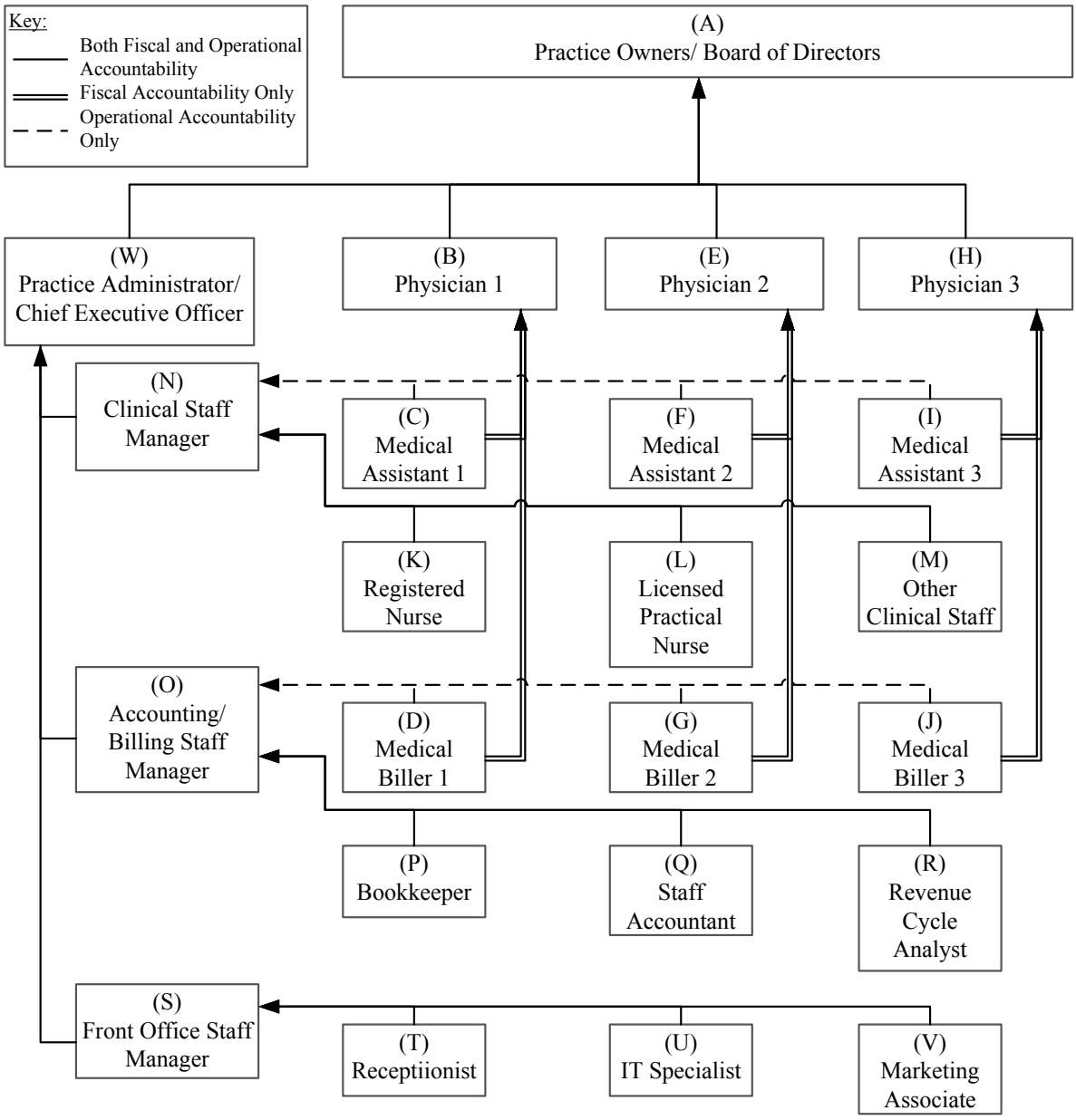
Figure 3-4: Market-Oriented Structure for a Physician Practice



Most physician practices are organized in an *integrated (matrix) structure*, which is a *hybrid model* that incorporates elements of *both functional* and *market oriented structures*.[125] *Integrated structures* tend to *communicate well* across functional areas and achieve *some economies of scale* by leveraging functional experts across multiple markets served.[126] However, due to the *increase in managerial time* in coordinating the activities of the organization, integrated structures have *higher* levels of *overhead* than functional or market-oriented structures.[127] In addition, because they lack a clear *chain of command*, integrated structures are subject to *internal power struggles*.[128]

123 "Organizational Behavior: The Management of Individual and Organizational Performance" By David Cherrington, Needham Heights, MA: Allyn and Bacon: 1989, p. 518.
124 "Organizational Behavior: A Diagnostic Approach" By Judith Gordon, 7th Ed., Upper Saddle River, NJ: Prentice Hall, 2002, p. 408.
125 "Understanding and Managing Organizational Behavior" By Jennifer George and Gareth Jones, 2nd Ed., Reading, MA: Addison-Wesley Publishing Company, 1999, p. 538; see Figure 3-5: *Integrated Structure for a Physician Practice*.
126 "Organizational Behavior: The Management of Individual and Organizational Performance" By David J. Cherrington, Needham Heights, MA: Allyn Bacon, 1989, p. 524-525.
127 "Organizational Behavior: A Diagnostic Approach" By Judith Gordon, 7th Ed., Upper Saddle River, NJ: Prentice Hall, 2002, p. 410.
128 Ibid.

Figure 3-5: Integrated Structure for a Physician Practice



Cultural Dimensions

C*ulture* is the *informal* set of "*...shared...meanings, assumptions, understanding[s], norms, values [and] knowledge.*"[129] Most organizations form around two areas of emphasis:[130]

(1) *Functional cultures*, which focus on meeting *individual* practice *leader* needs; and
(2) *Process-driven cultures*, which focus on meeting *organizational workflow* needs.

129 "Organizational Theory: Modern, Symbolic, and Postmodern Perspectives" By Mary Jo Hatch, New York, NY: Oxford University Press, 1997, p. 204.
130 "Organizational Behavior: A Diagnostic Approach" By Judith Gordon, 7th Ed., Upper Saddle River, NJ: Prentice Hall, 2002, p. 375.

Each of these cultures may be classified based on its value dimensions (see Table 3-1: Dimensions of Culture).[131]

Table 3-1: Dimensions of Culture

Functional Cultures	Process Driven Cultures
Stability	Innovation
People-Oriented	Outcome-Oriented
Top-down communication	Bottom-up communication
Generalist training focus	Specialized training focus
Control	Sharing
Personality-focused recruiting	Skill-focused recruiting
Loyal to the organization	Loyal to the profession
Profitable Work	Interesting Work
Accountable to superiors	Accountable to peers
Autonomous decision making	Collaborative decision making
Advancement based on tenure	Advancement based on performance

The practice's culture significantly influences everything about an organization including: (1) strategy; (2) internal and external communications; (3) staffing; (4) setting organizational objectives; (5) management style and, most importantly; (6) compensation.[132]

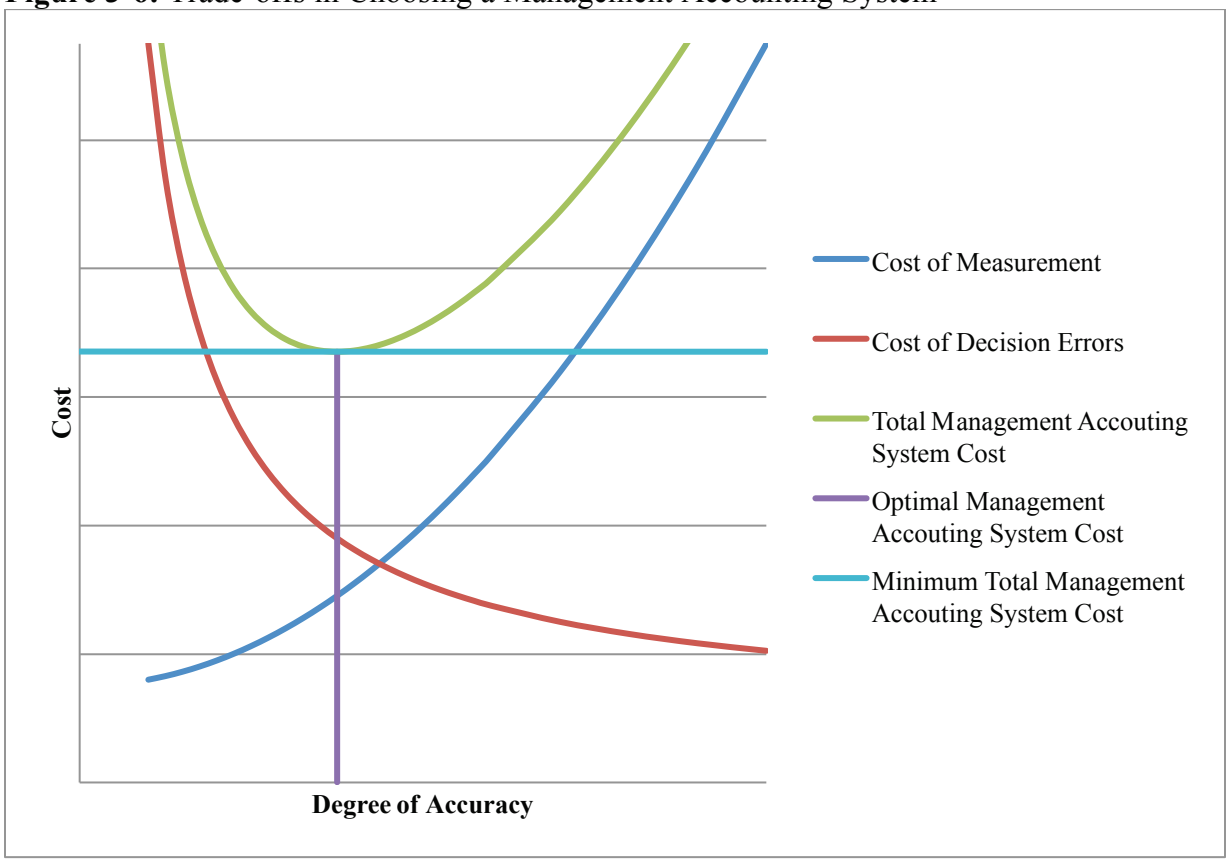
Managerial Accounting System Dimensions

Managerial accounting is "…a value-adding continuous improvement process of planning, designing, measuring, and operating both *nonfinancial information systems* and *financial information systems* that guides management action, motivates behavior, and supports and creates the cultural values necessary to achieve an organization's strategic, tactical, and operating objectives" [Emphasis added].[133] The *managerial accounting system* is the information system that assists practice owners in determining "…whether organizational level, business level, and operational level, [and physician level] strategies… and objectives are being met."[134] *Managerial accounting systems* range from the very simple, which only "…measure and monitor actual spending against…budgets,"[135] to the very complex, where individual business units (e.g., individual physicians or practice locations) are treated as *profit centers* that "…buy and sell products and services…as if [each business unit is an] independent company…creating an internal market [that] improve[s] the motivation…and provides an effective way of evaluating [individual business unit] performance."[136] In general, *simple managerial accounting systems* are *inexpensive* to implement and *increase decision errors* because of the *low quality information* available, while *complex managerial accounting systems* are *expensive* to implement and *reduce decision errors* because of the *high quality information* available.[137] Practices tend to optimize

131 "Principles of Personnel Management" By Edwin Filippo, 2nd Ed., New York, NY: McGraw-Hill, 1966, p. 362-364; "Organizational Behavior: A Diagnostic Approach" By Judith Gordon, 7th Ed., Upper Saddle River, NJ: Prentice Hall, 2002, p. 376-377; "Physician Compensation Arrangements: Management and Legal Trends" By Daniel Zismer, Gaithersburg, MD: Aspen Publishers, p. 114.
132 "Physician Compensation Arrangements: Management and Legal Trends" By Daniel Zismer, Gaithersburg, MD: Aspen Publishers, p. 104; "Organizational Behavior: A Diagnostic Approach" By Judith Gordon, 7th Ed., Upper Saddle River, NJ: Prentice Hall, 2002, p. 377-378.
133 "Management Accounting" By Anthony Atkinson, et al., 4th Ed., Upper Saddle River, NJ: Prentice Hall, 2004, p. 587.
134 Ibid, p. 283.
135 Ibid, p. 15.
136 Ibid, p. 12.
137 "Cost Management: Strategies for Business Decisions" By Ronald Hilton, et al, 2nd Ed., Boston, MA: McGraw-Hill, 2003, p. 144.

the performance of their management accounting systems by simultaneously minimizing the *measurement costs* and the *decision error* costs (see Figure 3-6: *Trade-offs in Choosing a Management Accounting System*).[138]

Figure 3-6: Trade-offs in Choosing a Management Accounting System[139]



In particular, more *complex* management accounting systems enhance the practice's *ability* to *pool* different *activities* into separate physician profit centers,[140] thereby significantly increasing the likelihood that physician practices may achieve *goal congruence* by allocating:

(1) Revenue by:
   a. Dollar amount of individual physician collections;[141]
   b. Individual physician wRVU productivity;[142]
   c. Number of physicians;
   d. Hours worked by physician;
   e. Attainment of quality metrics;
   f. Patient satisfaction measures;
   g. Achievement of shared savings targets;

138 "Management Accounting" By Anthony Atkinson, et al., 4th Ed., Upper Saddle River, NJ: Prentice Hall, 2004, p. 89.
139 Ibid, p. 90.
140 "Cost Management: Strategies for Business Decisions" By Ronald Hilton, et al, 2nd Ed., Boston, MA: McGraw-Hill, 2003, p. 48-49.
141 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 145.
142 Ibid, p. 146.

h. Executive and management services;[143]
i. Call and coverage services rendered;
j. Research services;
k. Business development and community outreach;
l. Individual physician patient encounters; or
m. Any combination or permutation of the above allocation methods; and

(2) Expenses by:
a. Individual physician resource utilization;[144]
b. Individual physician RVU productivity;
c. Number of physicians;[145]
d. Support staff time or compensation;
e. Location hours or square feet;
f. Individual CPT resource utilization;
g. Patient encounter utilization; or
h. Any combination or permutation of the above allocation methods.

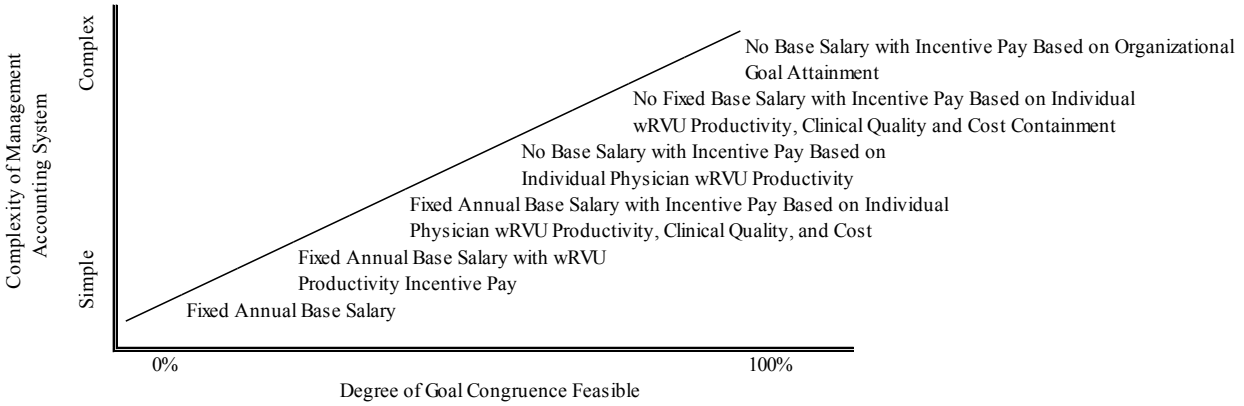
It should be noted that frequently, in practice, organizations select a single driver (e.g., wRVU productivity) and assign a conversion factor (e.g., wRVUs per hour) to capture activities not accurately reflected by the single driver (e.g., executive and management services).

Effective use of *managerial accounting systems* allows physician practices to achieve goal congruence by:[146]

(1) Rewarding individuals (e.g., physicians) for their contributions to organizational (e.g., practice or health system) objectives;
(2) Delegating organizational (e.g., practice or health system) control to individuals (e.g., physicians);
(3) Measuring the impact of individual (e.g., physician) performance in meeting organizational (e.g., practice or health system) goals;
(4) Setting clear performance standards for each individual employee;
(5) Emphasizing individual (e.g., physician) performance in meeting *"*mission critical*"* organizational (e.g., practice or health system) objectives; and
(6) Incentivizing individuals (e.g., physician) to coordinate their activities to meeting organizational (e.g., practice or health system) objectives.

143 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 146.
144 Ibid, p. 145.
145 Ibid, p. 145.
146 "Management Accounting" By Anthony Atkinson, et al., 4th Ed., Upper Saddle River, NJ: Prentice Hall, 2004, p. 331-332; see Figure 3-7: *Impact of Managerial Accounting System on Goal Congruence Feasibility Under Fee For Service Reimbursement*.

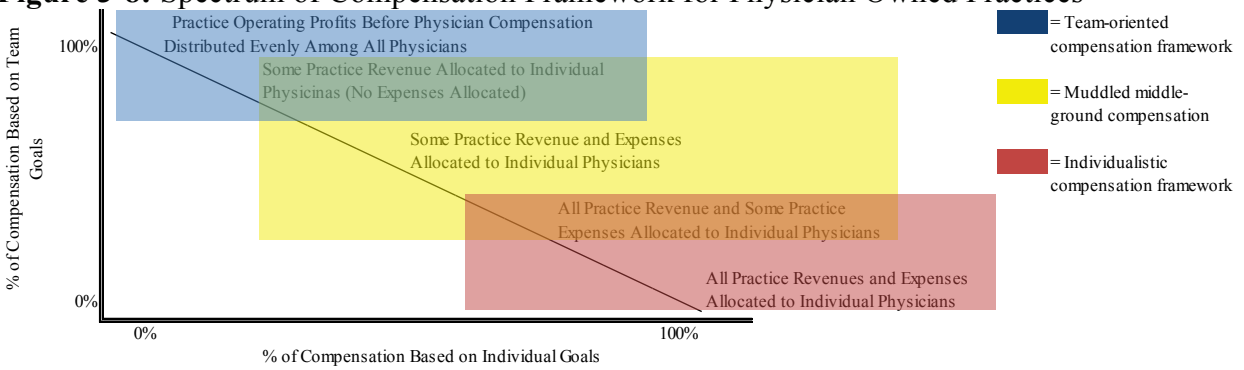
Figure 3-7: Impact of Managerial Accounting System on Goal Congruence Feasibility Under Fee for Service Reimbursement



The Spectrum of Physician Compensation Plan Frameworks

The practice's organizational structure, culture, and managerial accounting systems all interact to determine whether the compensation plan should be based on the performance of: (1) *individual* practitioners; (2) a cohesive *team-oriented* group; or (3) somewhere in-between, referred to as the *"muddled middle ground"* (see Figure 3-8: *Spectrum of Compensation Framework for Physician Owned Practices*).[147]

Figure 3-8: Spectrum of Compensation Framework for Physician Owned Practices



Individualistic compensation plan frameworks emphasize *individual practitioner performance*.[148] Alternately, *team-oriented compensation plan frameworks* tend to be based on the organization's *overall performance*.[149] *Muddled middle ground compensation plan frameworks* emphasize *both individual practitioner performance* and *overall practice performance*.[150]

A *well-developed compensation plan matches organizational structure*, *culture*, and *management accounting systems* to *promote practice goals* as well as *rewarding individual*

147 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 64-66.
148 "Compensation and Incentive Plans for Physicians" By Charles Stiernberg, November 2001, http://www2.utmb.edu/otoref/Grnds/Compensation_11-2001/Compensation_11-2001.pdf (Accessed 04/30/10),
149 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 63.
150 Ibid.

physician behaviors and *activities*.[151] As such, the physician compensation plan should emulate the principles and goals defined in Step 1 of this process.[152]

Individualistic Frameworks

Individualistic frameworks compensate based on the each physician's *individual performance*, *regardless of organizational goal attainment*.[153] In individual frameworks, each employee (e.g., physician) focuses on how they can *maximize* their own *individual compensation*, *regardless of the overall group compensation level*.[154] As such, physicians seek to *maximize* their *individual control* through *market-oriented organizational structures*, optimize their own performance by creating a *functional culture*, and precisely measure their own performance through *complex management accounting systems*.

Team-Oriented Frameworks

Plans characterized by a *team-oriented framework* lie on the opposite end of the spectrum and only consider *organizational goal attainment*, regardless of *individual performance*.[155] In *team-oriented frameworks*, all employees (e.g., physicians) focus on how they can *maximize* the *aggregate level of compensation level*, *regardless* of *individual performance*.[156] As such, physicians seek to *maximize organizational productivity* through *functional organizational structures*, optimize organizational performance by creating a *process driven culture*, and minimize overhead costs by using *simple management accounting systems*.

Muddled Middle Ground Frameworks

The distribution of infrastructures across the spectrum, as it is discussed previously with regard to the categorical extremities, is based on the tendencies associated with these types of *individualistic* and *team-oriented* plans.[157] Plans classified as *muddled middle ground frameworks* possess *both team-oriented* and *individualistic* attributes, and compensate individual physicians based on *both individual performance* and *organizational goal attainment*.[158] There are *diverse arrays* of *muddled middle ground* frameworks that exist and *each plan* has its own *strengths* and *weaknesses,*[159] based on its *compatibility* with a practice's *organizational structure*, *culture*, and *managerial accounting systems*.

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151 "Toxicity of Pay for Performance" By Donald Berwick in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 138.

152 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 61; "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 59-61.

153 "Compensation and Incentive Plans for Physicians" By Charles Stiernberg, November 2001, http://www2.utmb.edu/otoref/Grnds/Compensation_11-2001/Compensation_11-2001.pdf (Accessed 04/30/10),

154 "Modern Labor Economics: Theory and Public Policy" By Ronald Ehrenberg and Robert Smith, 11th Ed., Boston, MA: Prentice Hall, 2012, p. 364, 368-369.

155 "Labor Economics & Labor Relations" By Lloyd Reynolds, et al., 10th Ed., Englewood Cliff, NJ: Prentice-Hall, 1991, p. 194.

156 "Modern Labor Economics: Theory and Public Policy" By Ronald Ehrenberg and Robert Smith, 11th Ed., Boston, MA: Prentice Hall, 2012, p. 365-366, 369.

157 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 99.

158 Ibid, p. 63, 91, 99.

159 "Case for Linking Clinical Performance to Compensation" By Al Truscott in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 139.

STEP 3: BENCHMARKING

Benchmarking is essential to the process of compensation planning; it involves the *comparison* of *key performance indicators* (e.g., financial, productivity, and quality metrics) against a *performance standard* for organizations of similar or the same kind.[160] Benchmarking, as part of compensation plan development, serves such purposes as:

(1) Determining where a particular practice stands in comparison to similar practices in terms of overhead spending, staffing and staff distribution, supply expenditures, and so forth;[161]
(2) Identifying problematic areas of operation in which a practice may wish to improve efficiency;[162]
(3) Comparing physician-specific rates of compensation for fairness;[163]
(4) Comparing physician-specific rates of production;[164] and
(5) Comparing physician-specific rates of compensation to rates of production and determine if there is appropriate correlation.[165]

Benchmarking on the organizational and practitioner levels may be of significance,[166] as it relates to compensation planning as discussed in Chapter 2: *Benchmarking.*

STEP 4: ESTABLISHING THE GENERAL FRAMEWORK

As discussed in Steps 2 and 3, the countless systems of physician compensation implemented in the healthcare industry can be identified through extensive research and evaluated alongside internal and external factors and benchmarking metrics.[167] Based on this research and evaluation, the plans best suited for a given practice can be identified and the foundation, or general framework, for a compensation plan can be developed.[168] The various combinations across the cultural and financial dimensions serve to represent a significant number of feasible compensation options from which a practice may choose as its general framework.[169] An overarching system definition should be consistent with the goals and principles established in Step 1.[170] This framework serves as a high-level blueprint of the proposed compensation plan, ensuring that all the appropriate variables and alignment factors are taken into account before delineating the plan details.[171]

160 "Cost Management: Strategies for Business Decisions" By Ronald Hilton, et al, 2nd Ed., Boston, MA: McGraw-Hill, 2003, p. 9; See Chapter 2: *Benchmarking* for extensive discussion of benchmarking.
161 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, 200, p. 20.
162 "Performance Management: The Joint Commission's Perspective" By Paul Schyve in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 51.
163 "A Guide to Buying Physician Practice" By George Bodenger, et al., Washington, DC: Atlantic Information Services, 1995, p. 72-73.
164 Ibid.
165 Ibid.
166 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association, Westchester, IL: 1997, p. 76-78.
167 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 32, 104-105.
168 Ibid, p. 32.
169 Ibid, p. 83; see *The Spectrum of Physician Compensation Plan Frameworks* section above.
170 "Case for Linking Clinical Performance to Compensation" By Al Truscott in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 138.
171 "A Guide to Buying Physician Practice" By George Bodenger, et al., Washington, DC: Atlantic Information Services, 1995, p. 76.

STEP 5: DETAILING THE PLAN INFRASTRUCTURE

With an infrastructure established, the details of the plan can be determined by keeping the following overarching questions and their subordinate considerations in mind:

(1) How will practitioners be compensated for the work that they do? When addressing this question, the following activities must be taken into consideration:[172]
   a. Clinical;
   b. Peer education;
   c. Commercial research;
   d. Medical directorship;
   e. Executive and administrative management;
   f. Coverage and call;
   g. Supervision of clinical staff; and
   h. Community outreach.

(2) What should rewards and incentives be based on? Key considerations include:[173]
   a. Volume;
   b. Outcomes and quality;
   c. Patient satisfaction;
   d. Cost containment;
   e. Overall enterprise profitability;
   f. Leadership;
   g. Clinical resource utilization; and,
   h. Social benefit generated.

(3) What should be the standard level of incentive and evaluation? Key levels to consider include:[174]
   a. Individual employee level (e.g., the physician level);
   b. Branch level (e.g., specialty group level in multispecialty practices);
   c. Division level (e.g., entire practice);
   d. Company level (e.g., entire regional health system); and
   e. A combination of these various levels.

(4) How should incentive compensation be structured? Key considerations include:[175]
   a. Fixed price per unit of output (e.g., RVU, patient encounter, hour);
   b. Fixed percentage per unit of output (e.g., percentage of shared savings realized, percentage of collections, percentage of practice operating profits before physician compensation);
   c. Fixed dollar amount after an outcome threshold is reached;

172 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 103-116.
173 "What Information Do Managers of Health Care Organizations Need to See: A Physician Manager's Perspective?" By Charles Cutler in "Measuring Clinical Care: A Guide for Physician Executives" Edited By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 27-39.
174 "Cost Management: Strategies for Business Decisions" By Ronald Hilton, et al, 2nd Ed., Boston, MA: McGraw-Hill, 2003, p. 872-873.
175 "Principles of Personnel Management" By Edwin Flippo, 2nd Edtion, New York, NY: McGraw-Hill, 1966, p. 302-309.

d. Variable price per unit of output (e.g., $0/wRVU before a productivity threshold is reached and $40/wRVU above the threshold);
e. Variable percentage per unit of output (e.g., 25 percent of operating below $400,000, and 50 percent of operating profits above $400,000); and,
f. Variable dollar amount after an outcome threshold is reach (e.g., $0 for Consumer Assessment of Healthcare Providers and Systems (CAHPS) scores below 90 percent, $10 per basis point (0.01 percentage points) for CHAPS scores above 90 percent, and $15,000 for 100 percent CHAPS scores).

(5) What is degree of goal congruence? Key considerations include:
a. Incentivizing employees (e.g., physicians) for their individual contributions to organizational (e.g., practice) objectives;[176]
b. Rewarding outputs (e.g., wRVU productivity) instead of inputs (e.g., hour worked);[177]
c. Emphasizing the organizations' *critical success factors*;[178] and
d. Rewarding coordination in achieving the *organizations'* goals.[179]

By addressing such key questions and considerations within the context of the practice setting, the details of a plan customized to the needs of that practice can be outlined.[180]

STEP 6: GENERATING A FINANCIAL MODEL

Mathematical modeling is "…a process that translates observed or desired phenomena into mathematical expressions."[181] A subset of mathematical modeling, *prediction modeling* "…describe[s] or predict[s] events…given certain conditions."[182] *Financial modeling* is a type of prediction modeling that *projects free cash flow* to capital holders (including government entities) based on:[183]

(1) Expected revenue, operating expenses, and capital expenditures;
(2) "…Prospective industry supply and demand…[as well as existing] capacity, demand, and market share;"
(3) "…Historical financial data…[and] financial statements;"
(4) Non-cash expenses such as depreciation; and
(5) Changes in the request level of working capital required to operate the business.

A financial model of a projected compensation plan is typically generated by the accounting and finance staff upon request of the compensation committee or other governing entities.[184]

176 "Cost Management: Strategies for Business Decisions" By Ronald Hilton, et al, 2nd Ed., Boston, MA: McGraw-Hill, 2003, p. 889.
177 Ibid, p. 54.
178 "Management Accounting" By Anthony Atkinson, et al., 4th Ed., Upper Saddle River, NJ: Prentice Hall, 2003, p. 331.
179 "Case for Linking Clinical Performance to Compensation" By Al Truscott in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 140.
180 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 33-34.
181 "Applied Management Science: Modeling, Spreadsheet Analysis, and Communication for Decision Making" By John Lawrence, Jr., and Barry Pasternack, 2nd Ed., Hoboken, NJ: John Wiley & Sons, 2002, p. 7.
182 Ibid, p. 8.
183 "Corporate and Project Finance Modeling: Theory and Practice" By Edward Bodmer, Hoboken, NJ: John Wiley & Sons, 2015, p. 20, 25.
184 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 33-34.

Historical practice data and industry benchmarks should be used to make projections about the practice's compensation rates,[185] within the context of market-based compensation plan levels, measures of productivity, and other performance indicators. A model can effectively demonstrate practitioner shifts in compensation and progress towards organizational objectives.[186] It should be noted that while *financial models* are at "…the core of most business plan[ning]…"[187] including compensation planning, financial models "…are simply that – models of reality,"[188] and "[n]o model is 100% accurate;"[189] rather, financial model serve improve the information available to those making the decisions and implementing policies.

The *general frameworks* of proposed plans typically are *evaluated prior* to assessing *financial models*, because the committees and governing entities may wish to assess their plans without compromising objectivity, which may be a concern when financial values are assigned to individual members of the practice.[190]

STEP 7: DEFENDING AGAINST ALTERNATIVE MODELS

Not only is it important to model the changes that a proposed plan, or multiple proposed plans, will encounter, but it is also necessary to compare these changes to the effect that alternative models may have on the practice compensation plan as well.[191] By comparing various models to each other and removing any cause for bias by approaching the financial data in a *"blinded"* manner, the committee will not be moved by any personal or misaligned motivations (e.g., removing individual physician names to ensure that compensation is not biased unfairly).[192]

STEP 8: OUTLINING TRANSITION AND IMPLEMENTATION STEPS

Once the committee decides on a compensation plan to propose to the practice as best suited to meet the group's needs, a reasonable and thorough plan for transitioning from the old compensation scheme to the new compensation plan must be developed.[193] As previously mentioned, this process may be very gradual, depending on the amount of change that the practice and its members are undertaking.[194] Such means of transitioning may include incrementally planned changes to the plan infrastructure and mechanics over the course of several months or years or the provision of data to practitioners a certain amount of time prior to

185 "Physician Compensation Strategies" By Craig Hunter and Max Reiboldt, 2nd Ed., Chicago, IL: American Medical Association, 2004, p. 63.
186 "A Guide to Buying Physician Practice" By George Bodenger, et al., Washington, DC: Atlantic Information Services, 1995, p. 76.
187 "Financial Modeling" By Simon Benninga, 3rd Ed., Boston, MA: Massachusetts Institute of Technology, 2008, p. 135
188 "Applied Management Science: Modeling, Spreadsheet Analysis, and Communication for Decision Making" By John Lawrence, Jr., and Barry Pasternack, 2nd Ed., 2002, p. 18.
189 Ibid, p. 24.
190 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 35.
191 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth M. Hekman, New York, NY: McGraw-Hill, 2000, p. 119.
192 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 36.
193 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 36; "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth M. Hekman, New York, NY: McGraw-Hill, 2000, p. 119.
194 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth M. Hekman, New York, NY: McGraw-Hill, 2000, p. 119.

the actual implementation of the new plan.[195] In doing so, the practice and its members are given what has been determined as ample time to acclimate to the proposed change.[196]

STEP 9: PROPOSING THE NEW PLAN

The development process for a compensation plan includes the following elements:

(1) a concise statement of foundational goals, principles, and leadership;
(2) a succinct statement of the supporting rationale and research for those goals and principles;
(3) consideration of the spectrum of the various options, as well as a detailed explanation as to the elimination criteria by which the most appropriate plans were identified;
(4) comprehensible presentation of benchmarking data and financial models;
(5) substantiation as to the independent and unbiased nature of the planned evaluation process;
(6) a statement of a detailed and reliable action plan for implementation;
(7) presentation of the planning process and the recommended plan by the planning committee to the governing entities; and,
(8) presentation of the selected plan to the practice as a whole.[197]

There must be both *formal* and *informal means* by which *practice members* can *communicate* their questions, comments, or concerns to *administrative authorities* via e-mail correspondence, through practitioner forums and one-on-one meetings, or by some other means of communication.[198] Before presenting a proposed plan, the development committee or governing entities can reasonably ensure that they have accounted for the primary facets of the development process by utilizing the checklist found in the appendix.[199]

STEP 10: ARRIVING AT A CONSENSUS

Arriving at some form of a consensus is the final—and key—step to developing a new compensation plan.[200] The term *consensus* is used lightly in this context, because these plans often are faced with skepticism by practice members.[201] The minimum threshold for a successful proposal is mild approval and toleration by the majority of practitioners.[202] In order for the

195 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth M. Hekman, New York, NY: McGraw-Hill, 2000, p. 119.
196 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 36-37.
197 Ibid, p. 37.
198 "Merritt, Hawkins, & Associates Guide to Physician Recruiting" By James Merritt, et al, Irving, TX: Merritt, Hawkins, & Associates, 2009, p. 16-18.
199 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 46.
200 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 60-61.
201 "Four Basic Principles of Compensation," in "Physician's Compensation: Measurement, Benchmarking, and Implementation," by Lucy R. Carter, CPA, and Sara S. Lankford, CPA, John Wiley & Sons, Inc., 2000, p. 56; "The Compensation Plan Development Process," in "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA, and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 37.
202 "Four Basic Principles of Compensation," in "Physician's Compensation: Measurement, Benchmarking, and Implementation," by Lucy R. Carter, CPA, and Sara S. Lankford, CPA, John Wiley & Sons, Inc., 2000, p. 56; "The Compensation Plan Development Process," in "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA, and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 37.

physicians to accept the compensation model, the model must be understandable, equitable, and it must promote the best interests of the group.[203]

> The term consensus is used lightly in reference to compensation planning, because these plans are often faced with skepticism to say the least. A proposal is considered successful if it is met with mild approval—regarded as tolerable by the majority of practitioners.
>
> ***Lucy R. Carter, CPA, and Sara S. Lankford, CPA, 2000,***
> ***Bruce A. Johnson, JD, MPA, and Deborah Walker Keegan, PhD, FACMPE, 2006.***

WHERE?—THE COMPENSATING ENTERPRISE

The various stakeholders concerned with a practice's means of compensation continue to become increasingly interrelated, especially as the level of organizational consolidation and affiliation within the healthcare industry continues to increase and diversify. This section and the one following discuss the practice and the practitioner separately and as they relate to each other in order to establish an understanding of the performance, productivity, and practice drivers of compensation planning.

PRACTICE BENCHMARKING

As discussed in Chapter 2: *Benchmarking*, *benchmarking* is a technique to compare the *subject practice's* current operational, clinical, and financial performance to their *historical trends* as well as to *industry normative benchmark standards*. There are several key considerations that should drive practice-level benchmarking analyses and, therefore, compensation planning,[204] including:

(1) Objectively evaluating performance indicators on practice and practitioner levels;[205]
(2) Indicating variability, extreme outliers, and prospects;[206]
(3) Identifying areas that require further attention and possible remediation (e.g., redistributing resources and staff and increasing operating room utilization);[207]
(4) Offering insight into practice and practitioner performance as it relates to the rest of the market (e.g., allowing organizations to find where they "rank" among competitors and as a means for continuous quality improvement); [208]

203 Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 56-59.
204 See Chapter 2: *Benchmarking*.
205 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association and HCIA, Inc.: Baltimore, MD 1997, p. 76-77.
206 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 110
207 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association and HCIA, Inc.: Baltimore, MD 1997, p. 76-77.
208 Ibid.

(5) Providing practices with a value-metric system to assist in determining *fair market value* and *commercial reasonableness*;[209] and
(6) Promoting improvement (e.g., improving average length of stay (ALOS) and other clinical efficiency measures);[210]

FACTORS INFLUENCING PRACTICE PERFORMANCE

The key benchmarking considerations listed in the prior section are influenced by several characteristics specific to a practice's sites of service, ownership structure, community benefit objectives, staffing dynamics, and specialization.[211] Also, factors discussed as the four pillar drivers of productivity and compensation may influence the practice's overall performance.[212]

Sites of Service

As noted in Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars*, physicians are paid differently based upon whether they provide services in a facility, i.e., a hospital, or in a non-facility setting, i.e., a physician practice, as well as whether the physician performs services in an urban or rural location.

Hospital Facility Based Billing Versus Physician Office Based Billing

As set forth in Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars*, a practice that provides physician services in a medical office is reimbursed at a different rate than a practice who provides the same physician services in a facility (e.g., a hospital) setting. This reimbursement differential is a result of the facility incurring *some* of the expenses (e.g., rent and administrative staffing) associated with physician services when the practice provides a service at that facility.[213] Similarly, non-facility practice expenses are generally higher when the physician provides services in a medical office building because *all* of the expenses related to that service (e.g., utilities and equipment) are borne by the practice.[214] Accordingly, when negotiating compensation plans, physicians should be cognizant of this differential.

Geographic Area

In addition to the type of building where physician services are rendered, the *geographic area* may impact practice reimbursement. As noted in Chapter 2: *Reimbursement Environment* of Volume I: *An Era of Reform—The Four Pillars*, each of the 90 Medicare localities is reimbursed at a different rate for the same services rendered based on the *relative cost* of physician services,

209 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 112.
210 "Financial and Clinical Benchmarking: The Strategic Use of Data" Healthcare Financial Management Association and HCIA, Inc.: Baltimore, MD 1997, p. 76-77.
211 See Chapter 5*: Organizational Structure* for a detailed discussion of these various characteristics of a healthcare organization.
212 See *External Indicators [The Four Pillars*].
213 "Place of Service Affects your Reimbursement" By Mary LeGrand, AAOS Now, April 2008, http://www6.aaos.org/news/PDFopen/PDFopen.cfm?page_url=http://www.aaos.org/news/aaosnow/apr08/managing1.asp (Accessed 3/13/2015), p. 276-277.
214 "The Basics: Relative Value Units (RVUS)" National Health Policy Forum, The George Washington University, February 2009, http://www.nhpf.org/library/the-basics/Basics_RVUs_02-12-09.pdf (Accessed 4/1/09), p. 2-3.

practice expenses, and malpractice insurance.[215] In addition, physicians may receive a bonus payment of ten percent (10%) of their reimbursement for services rendered to Medicare beneficiaries in Health Professional Shortage Areas (HPSAs), geographic areas that lack sufficient healthcare providers.[216] These geographical differences may impact the amount of compensation paid by a practice to its physicians.

Retail Clinics Versus Physician Offices

Physician practices may also face growing competition from *retail clinics*, which focus on providing *"convenient care"* and continue to expand in the current healthcare market.[217] These *sites of services* generally provide care at *lower cost* than physician practices[218] due to *lower labor costs* and *economies of scale* from their retail affiliates.[219]

Ownership Structure: Balancing Long- Versus Short-Term Partnership Goals[220]

Tenure and, to some effect, seniority may impact compensation[221] and, therefore, practice performance. At one extreme, practices may wish to isolate new associates from the established system of compensating practitioners by insuring some form of set income for an established period of time.[222] This allows new practitioners to acclimate to the system while they grow into productive members of the practice.[223] Alternately, some systems are designed to incentivize loyalty and heighten retention by compensating on the basis of tenure and, to some effect, seniority.[224] Although, historically, seniority has been a key factor in determining base salary,[225] newer compensation plans may not necessarily account for senior ranking when establishing base salary.

Practices may engage in buy or sell agreements,[226] which may encourage the transition from associateship to partnership (known as buy-in arrangements), the transition from partnership to

215 "Geographic Price Cost Indexes: January 2015 Release" Centers for Medicare & Medicaid Services, January 2015, http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/PFS-Relative-Value-Files-Items/RVU15A.html?DLPage=1&DLSort=0&DLSortDir=descending (Accessed 3/17/2015); "Chapter 12: Physicians/Nonphysician Practitioners" in "Medicare Claims Processing Manual" Centers for Medicare & Medicaid Services, 10/17/2014, http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104c12.pdf (Accessed 3/17/2015).

216 "Health Professional Shortage Area (HPSA) Physician Bonus, HPSA Surgical Incentive Payment, and Primary Care Incentive Payment Programs" Centers for Medicare & Medicaid Services, July 2014, http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/HPSAfctsht.pdf (Accessed 3/17/2014).

217 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services," By Robert J. Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 442.

218 "Comparing Costs and Quality of Care at Retail Clinics With That of Other Medical Settings for 3 Common Illnesses" By Ateev Mehrotra, et al., Annals of Internal Medicine, Vol. 151, No. 5, 9/1/2009, p. 326.

219 "Retail Clinics: Facts, Trends, and Implications" By Paul Keckley, Deloitte, 2008, p. 12.

220 "Healthcare Transactions: A Description of the Process and Considerations Involve" By Robert J. Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Health Capital Consultants, p. 3-5.

221 "Labor Economics & Labor Relations" By Lloyd Reynolds, et al., 10th Ed., Englewood Cliff, NJ: Prentice-Hall, 1991, p. 195-196.

222 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 83-84.

223 "Physician's Compensation: Measurement, Benchmarking, and Implementation" By Lucy R. Carter and Sara S. Lankford, New York, NY: John Wiley & Sons, Inc., 2000, p. 83-84.

224 "Modern Labor Economics: Theory and Public Policy" By Ronald Ehrenberg and Robert Smith, 11th Ed., Boston, MA: Prentice Hall, 2012, p. 385-386.

225 "Physician Compensation Strategies" By Craig Hunter and Max Reiboldt, 2nd Ed., Chicago, IL: American Medical Association, 2004, p. 96.

226 "Physician Recruitment, Retention, & Separation" By C. Kay Freeman, Chicago, IL: American Medical Association, 2002, p. 118.

retirement (referred to as buy-out arrangements), or both. Weighting the long-term investment of incentivizing established practitioners against the short-term compromise of introducing new physicians into the practice might be a necessary consideration in determining how such transitions will factor into practitioner compensation. Over the years, established group practices have often presented *buy-in* offers to new associates as one of the understood terms of their employment. As a measure of precaution laced with incentive, physician-owned group practices may incorporate buy-in conditions into the understood terms of an their associate employment agreements.[227] Most often, this is contingent upon the satisfactory completion of one to three years of employment as an employed associate physician within the practice.[228] See Figure 3-9 for a medical practice buy-in flow chart.

Practice Buy-In Process: Considerations

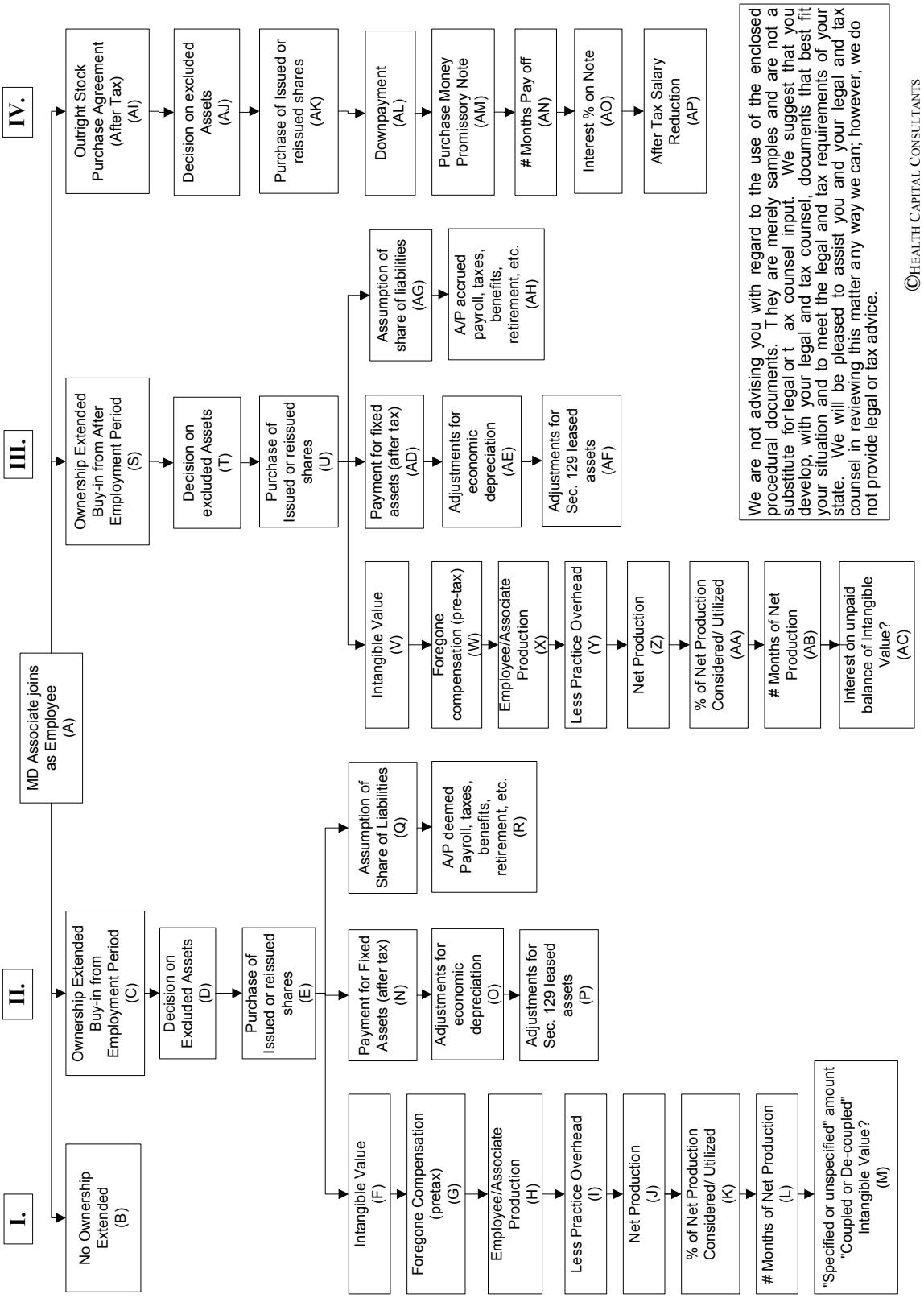
Employment agreements for associate physicians may only include vague and conditional provisions regarding the potential for buy-in to ownership interest in the practice.[229] The interim nature of this loosely termed *"*agreement*"* theoretically allows the practice more flexibility should the operational, financial, or market circumstances of the practice change or should the associate physician fail to meet the expectations of the practice, partners, or both.[230] The subsequent employment relationship will be much improved if the practice can preempt potential problems when the matter is ultimately negotiated.[231]

Period of Buy-In

The period of a buy-in is variable and, often, circumstantial. For most physician-owned practices, the buy-in period should last for three years; however, larger groups are encouraged to consider extending the duration to four or five years.[232] Additionally, it is not uncommon for enterprises in some markets to defer the decision to offer a buy-in for at least the first two years after the initial employment period begins.[233] Primary care practices typically require shorter associate employment periods (e.g., one to two years of employment) before extending a buy-in offer than do specialty and surgical practices.[234] However, in many situations, a new physician may clearly demonstrate all of the characteristics and the commitment necessary to become an owner after one year. Should the employment contract include a clause permitting the owner or owners to assess the situation at the termination of the initial contract, a buy-in offer may be extended (or withheld) at this time. This type of clause provides flexibility to the practice and incentivizes to the associate to demonstrate his or her desire for ownership.

227 "Physician Recruitment, Retention, & Separation" By C. Kay Freeman, Chicago, IL: American Medical Association, 2002, p. 118.
228 "Partner Buy-Ins" The Physician's Advisory: Vital Topic Series, Advisory Publications, Conshohocken, PA: Leif C. Beck, LL.B, C.P.B.C, 1999, p. 4.
229 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 142.
230 "Partner Buy-Ins" The Physician's Advisory: Vital Topic Series, Advisory Publications, Conshohocken, PA: Leif C. Beck, LL.B, C.P.B.C, 1999, p. 2, 3-4.
231 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 142.
232 "Partner Buy-Ins" The Physician's Advisory: Vital Topic Series, Advisory Publications, Conshohocken, PA: Leif C. Beck, LL.B, C.P.B.C, 1999, p. 4.
233 Ibid.
234 Ibid.

Figure 3-9: Medical Practice Buy-In Flow Chart



Ownership Percentage of the Practice

Most often physicians ultimately own equal shares in the practice; however, it is not unusual to encounter group practices with ownership or equity allocated between *senior* and *junior* shareholders or partners.[235] The *one-doc-one-shareholder* approach ordinarily is simpler to administer and maintain and is, therefore, more realistic for small groups.

Methods of Buy-In Payment

The buy-in amount is often paid through a *foregone compensation formula*, whereby a system of income differentials between the new physician and the existing owners of the practice is implemented for a specified period.[236] It should be noted that, as with any investment purchase, the buy-in transaction might have tax implications for a physician.

Community Benefit Objectives

Physician practices may be owned by *not-for-profit tax-exempt organizations*, which have an *obligation* to provide a *social benefit* to the *communities* they serve. These social benefits may not be related to the provision, management, or development of patient-related medical services (e.g., academic research, or public health outreach improvement).

Compensating Academic Activities and Research

While most physician practices operate a single business line (i.e., clinical services), many academic medical practices require physicians to engage in teaching and philanthropic research. As such, academic practices try to meet the following objectives in their physician compensation plans: (1) designing physician salaries to motivate physicians and staff to either directly or indirectly participate in clinical, research-based, or academic activities that may not produce revenue; (2) to focus on certain performance indicators set by and specific to the organization; and (3) to compensate physicians based on their level of productivity. The model a practice selects to implement depends on the organization's specific priorities and objectives.

Compensating Community Outreach

To an even greater degree than nonclinical activities (e.g., teaching and philanthropic research), a negative connotation is often linked to *community outreach activities* because some physicians believe that these services *negatively* affect their *clinical productivity*.[237] As such, practitioners may *"*cherry pick*"* activities[238] based on the perceived likelihood of *increasing patient volumes* and *developing a favorable payor mix* for that physician, thereby *neglecting indigent care areas*. In order to minimize the bias associated with the provision of outreach services, the *not-for-profit tax exempt organizations* may incentivize community outreach activities by:

235 Ibid, p. 5.
236 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 143, 146.
237 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert J. Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 906-907.
238 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 185.

(1) compensating physicians for travel time and expenses and (2) compensating physicians a fixed dollar amount for each time block.[239]

Staffing Dynamics

Depending on the role of non-physician employees in the medical practice, non-physician staff may influence the practice's compensation dynamic because each provider type is compensated differently.[240] As first described in Chapter 1: *Historical Development* and reinforced over the course of Volume I: *An Era of Reform—The Four Pillars*, *non-physician providers (NPPs)* play a diverse role in the provision of healthcare services. They may work synergistically with physicians, as a physician supplement for the provision of select services, or in parallel to physicians for the provision of services that, though comparable to physician services, are entirely outside the scope of physician practices. As such, NPPs may be further divided into three categories based on the types of services they provide:

(1) *Allied health professionals* (also known as *parallel providers*) have a scope of professional practice that is separate, distinct, and, essentially, parallel to the scope of physician practice.
(2) *Mid-level providers* (also known as *triage providers*) are trained to provide a specific subset of physician services, with the *original* objective of providing *triage* relief for physicians by enhancing patient throughput. Mid-level providers are afforded a significant level of autonomy within their scope of practice and, as such, they may act alongside—or independent of—physicians under certain conditions for the provision of previously determined services.
(3) *Technicians and paraprofessionals* (also known as *physician extenders*) that either provide manpower support or highly technical services both necessary for and contingent upon the provision of certain specialized physician services.

A practitioner that is placed in one of these categories is not always providing the services that distinguish them from practitioners in the other categories. For example, mid-level providers are relied upon for the provision of specialized services that are incident to physician services, but they also exercise a certain measure of independence because they can autonomously provide a specific scope of services *in lieu* of physicians.[241]

An appropriate measure of NPP productivity should reflect the type of services *performed*, not the type of services *permitted* under law. The compensation plan utilized is contingent upon the role played by the employed or contracted NPPs. For example, despite the expansion of mid-level provider autonomy, the supportive role of NPPs, as part of specialized medical or surgical teams, remains particularly significant.[242] In such settings, NPPs provide specialized manpower support to aid in the provision of physician services rather than independently providing billable services that generate revenue. For example, surgical assistants may be considered an expense

239 Ibid.
240 Ibid, p. 193-194.
241 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 194.
242 "What Can Midlevels Do For You?" By Leigh Page, Modern Medicien, 9/5/2008, http://license.icopyright.net/user/viewFreeUse.act?fuid=OTgyMTk3MQ%3D%3D (Accessed 9/8/2010).

exclusively related to a particular physician benefiting from their services and, therefore, allocated exclusively to that physician's profit center.

In addition to accounting for the services that are delegated to healthcare professionals within a practice setting, market indicators and benchmark data should be consulted to ensure that compensation methods align with the market norm.

Specialization: Single Specialty Versus Multispecialty Practice

Lastly, the specialty dynamic and mix will affect the means by which each type of physician or non-physician practitioner is compensated. For practices that wish to maintain pace with market competitors, it may be advantageous to implement compensation plans that cater to the demanded *specialty mix*. Additionally, the differences in the *continuum of care* afforded across *single specialty* and *multispecialty practices* will likely influence market control[243] and, therefore, practice incentives and compensation.

WHO?—THE PRACTITIONER

Traditional methods of practitioner compensation are structured as though clinical productivity is the sole indicator of performance.[244] As a result of various external drivers,[245] the increasingly complex and diverse practice dynamics (discussed in *Where?—The Compensating Enterprise*), and the evolution, diversification, and expansion of practitioner tasks, duties, responsibilities, and accountabilities, productivity-based benchmarks are no longer sufficient as the exclusive means of measuring practitioner performance and, therefore, compensation methodologies derived on the basis of such assumptions may be inadequate. Instead, the method a practice uses to compensate a practitioner should account for:

(1) The practitioner's clinical productivity;[246]
(2) The practitioner's nonclinical productivity;[247] and
(3) The practice's characteristics, ownership structure, and legal considerations.[248]

> Traditional methods of practitioner compensation are structured as though clinical productivity is the sole indicator of performance.
>
> ***Daniel K. Zismer and David A. Kaplan 1999.***

243 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, MO: Mosby-Year Book, 1998, p. 17-18.
244 "The Effects of Consolidation on Physician Compensation: Expectations and Future Challenges," by Daniel K. Zismer and David A. Kaplan, in "Physician Compensation Arrangements," by Daniel K. Zismer, An Aspen Publication, 1999, pp. 6–8.
245 See *External Indicators [The Four Pillars]*.
246 "Trends in Physician Compensation Arrangements: Q&A with Todd Mello of HealthCare Appraisers" By Lindsey Dunn, Becker's ASC Review, 11/23/2009, http://www.beckersasc.com/news-analysis/trends-in-physician-compensation-arrangements-q-a-a-with-todd-mello-of-healthcare-appraisers.html (Accessed 7/26/2010).
247 "Managing Physician Compensation in Integrated Health Systems: A Focus on the Clinical Specialties" By Daniel Zismer, Duluth, MN: Essentia Health Consulting, September 2007, p. 2.
248 "A Guide to Buying Physician Practice" By George Bodenger, et al., Washington, DC: Atlantic Information Services, 1995, p. 71.

Productivity can be *quantified collectively* for all activities or *separately* for each type of activity. Activities may be categorized in several ways, typically accounting for clinical practice, commercial research, and leadership. *Clinical productivity* can be quantified relative to the organization's prioritized performance indicators and, therefore, can be based on work relative value units (wRVUs), gross charges, net charges, collections, profitability, or a weighted combination of these variables.[249] The purest of these *clinical metrics* is the wRVU, and perhaps the least pure is profitability, because profitability is sensitive to non-physician staff performance and collections as well as payor mix and, as a result, it is subject to the most statistical variability.

A sample set of wRVU data can be found in Chapter Appendix B at the end of this chapter to illustrate how to calculate the various components involved in determining compensation using this approach.

A relative value unit (RVU) methodology also may be used to quantify commercial *research* productivity, whereby RVUs are assigned to, for example, the salary support generated through grants and contracts weighted according to the amount of support received. Compensation for a particular research venture is then calculated based each employee's role or level of involvement[250] using the established clinical compensation methodology.

PRACTITIONER BENCHMARKING

The roles and responsibilities of practitioners have diversified to complement an array of healthcare organization types. In other words, an individual's performance is, in part, a result of the practice environment.[251] *Practitioners* that *emulate* a practice's clinical or nonclinical *objectives* are contributing to the success of the organization.[252] The elements that should be factored into measuring practitioner performance are substrata of clinical and nonclinical productivity.[253]

Benchmarking clinical and nonclinical productivity on the practitioner level can help address several key considerations when developing a compensation plan, namely:[254]

(1) Where practitioner compensation falls with respect to the statistical distribution of other practitioners, either internally or externally;
(2) Where practitioner clinical production falls with respect to the statistical distribution of other practitioners, either internally or externally; and
(3) Where practitioner performance in other areas (that is, nonclinical performance measures) falls with respect to the statistical distribution of other practitioners, either internally or externally.

249 "Adapting Industry-Style Business Model to Academia in a System of Performance-Based Incentive Compensation" By E. Albert Reece et al., Academic Medicine, Vol. 83, No. 1 (January 2008), p. 78; "An Incentive Compensation System That Rewards Individual and Corporate Productivity" By Deanna R. Willis et al., Family Medicine, Vol. 36, No. 4 (April 2004), p. 272.
250 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 116.
251 "Compensation Committee Guide" By J.E. Richard, 9th Ed., Half Moon Bay, CA: Executive Compensation Institute, p. 66.
252 "Case for Linking Clinical Performance to Compensation" By Al Truscott in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 137.
253 "An Incentive Compensation System That Rewards Individual and Corporate Productivity" By Deanna R. Willis et al., Family Medicine, Vol. 36, No. 4 (April 2004), p. 271.
254 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth Hekman, New York, NY: McGraw-Hill, 2000, p. 85-89.

By assessing practitioner data, the proper balance of quality, efficiency, and clinical or nonclinical productivity can be established and a compensation plan can be constructed accordingly.[255] However, it is also essential to keep the process of data communication transparent. The reporting of raw, actionable data to decision makers[256] (e.g., physicians) is commonly referred to as *practice profiling***.** Specifically, practitioners receive periodic report cards that enable them to assess their performance relative to their peers, by comparing productivity data, quality indicators, and financial measures.[257] Keeping practitioners engaged in initial and continued benchmarking and performance assessments will not only reduce tension and controversy, but also will motivate practitioners to improve their performance.[258]

FACTORS INFLUENCING PRACTITIONER PERFORMANCE

Clinical Productivity

Clinical productivity is one of the *primary* benchmarking considerations that should navigate the development of a compensation plan. There are four practitioner-specific drivers of clinical productivity: time, efficiency, volume, and quality performance.[259] These factors should comprise a significant portion of the benchmark analysis conducted during the compensation plan development process. Comparing a *specific* provider's productivity to the *practice's average* productivity as well as *industry normative data* may helpful in assessing the adequacy of a proposed compensation plan.

Time

The amount of *time* a practitioner dedicates to clinical activity will, naturally, influence the practitioner's level of clinical productivity. However, a growing emphasis is being placed on administrative, executive, volunteer, and other nonclinical activities in measuring practitioners' performance and compensating practitioners for their work.[260] The time dedicated to such tasks inevitably affects the amount of time spent on clinical activities. Nonclinical activities as a growing portion of practitioner responsibilities will be discussed further in the *Nonclinical Productivity* section.

Efficiency

An individual's level of *efficiency* will also, invariably, contribute to his or her level of productivity and, therefore, his or her level of compensation.[261] Taking efficiency into consideration will, in part, account for the discrepancy introduced by nonclinical time worked, as

255 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 114.
256 "Measuring Clinical Care: A Guide for Physician Executives" By Stephen C. Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 51.
257 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth M. Hekman, New York, NY: McGraw-Hill, 2000, p. 21-22.
258 Ibid, p. 77.
259 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 114-115.
260 Ibid.
261 "Labor Economics & Labor Relations" By Lloyd Reynolds, et al., 10th Ed., Englewood Cliff, NJ: Prentice-Hall, 1991, p. 189.

well as the variability introduced by fewer hours worked or part-time practitioners. However, a variable that may contribute to efficiency and should, therefore, be taken into consideration is the degree or type of practitioner specialization and what implications that may have on the degree of difficulty of work, type of work, or both that a practitioner performs.[262]

Volume

The *volume* of clinical production is a third variable contributing to the measure of practitioner productivity should be taken into consideration. As with time considerations, nonclinical volume may be an impediment to clinical volume, and it should be taken into consideration when calculating productivity from any measure of volume.[263] Also, the degree and complexity of care rendered will likely contribute to the amount of patient volume because more severe illnesses will require more time and, therefore, may reduce patient volume.[264]

Quality

The *quality* of care administered to a patient is the fourth—and final—personal driver of productivity.[265] Quality benchmarking has taken and increasingly predominant place in measuring practitioner performance and compensating accordingly.[266] As discussed in the *Key Reimbursement Considerations* section above, P4P methods of reimbursement have emerged in recent years. Quality of care measures have become increasingly important in determining physician compensation,[267] as trends in the reimbursement environment have shifted to focus on the value of healthcare services.

Nonclinical Productivity

Nonclinical activities that may factor into practitioner productivity may include:[268]

(1) Executive and administrative management;
(2) Medical directorship;
(3) Supervision of clinical staff;
(4) Community outreach;
(5) Peer education; and
(6) Commercial research.

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262 "Physician Compensation Plans: State-of-the-Art Strategies" By Bruce A. Johnson and Deborah Walker Keegan, Englewood, CO: Medical Group Management Association, 2006, p. 115.
263 "The Toxicity of Pay for Performance" By Donald Berwick in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 134.
264 "An Argument for Linking Compensation to Performance" By Steven Zatz and Cary Sennett in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 145.
265 "What Information Do Managers of Health Care Organizations Need to See: A Physician Manager's Perspective?" By Charles Cutler in "Measuring Clinical Care: A Guide for Physician Executives" Edited By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 29.
266 "An Argument for Linking Compensation to Performance" By Steven Zatz and Cary Sennett in "Measuring Clinical Care: A Guide for Physician Executives" By Stephen Schoenbaum, Tampa, FL: American College of Physician Executives, 1995, p. 143-145.
267 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth M. Hekman, New York, NY: Medical Group Management Association, 2000, p. 52.
268 "How to Join, Buy, or Merge a Physician's Practice" By Yvonne Fox and Brett Levine, St. Louis, Missouri: Mosby-Year Book, 1998, p. 109-116.

A practitioner's performance in any of these areas is driven by personal motivators as well as the by various practice attributes, as discussed in the *Where?—The Compensating Enterprise* section above. The methods, considerations, and concerns related to compensating nonclinical performance are discussed in *Community Benefit Objectives*, above.

CONCLUSION

With the diversification of healthcare professional practice enterprises and workforce practitioners, compensation for services rendered went from being fairly simple to invariably complex and delicate. An array of compensation options, as demonstrated in the previous sections, became available to meet the emerging challenges associated with the demand for shorter hours and increased leave times; reduced demand for productivity; increased emphasis on noncash benefits; increased opportunity for, and emphasis on, professional development in nonclinical areas (that is, research, teaching, and management); and emphasis on professional training and development. With those countless options emerged countless legal violations, business faux pas, competitive strains, and financial variables that factored into the development of practice-tailored compensation plans. With movements in healthcare reform, increased enforcement of fraud and abuse compliance and emphasis on a more fluid and effective continuum of care will likely add to the weight attributed to these drivers of compensation planning.

Key Sources

Key Source	Description	Citation	Website
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Internal Revenue Service (IRS)	The IRS is organized to carry out the responsibilities of the secretary of the Treasury under section 7801 of the Internal Revenue Code.	www.irs.gov/	www.irs.gov
Council on Graduate Medical Education	Authorized by Congress in 1986 to provide ongoing assessment of physician workforce trends	"Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. v.	www.cogme.gov/

(continued)

Key Source	Description	Citation	Website
Cost Survey	Surveys performed and published by the Medical Group Management Association	N/A	www.mgma.com
Cost Survey for Single-Specialty Practices		N/A	www.mgma.com
Cost Survey for Multi-Specialty Practices		N/A	www.mgma.com
Cost Survey for Cardiovascular/Thoracic Surgery and Cardiology		N/A	www.mgma.com
Cost Survey for Orthopedic Practices		N/A	www.mgma.com
Cost Survey for Integrated Delivery System Practices		N/A	www.mgma.com
Medical Group Compensation and Financial Survey		N/A	www.mgma.com
Ambulatory Surgery Center Performance Survey		N/A	www.mgma.com
Physician Compensation and Production Survey		N/A	www.mgma.com
Management Compensation Survey		N/A	www.mgma.com
Physician Placement Starting Salary Survey		N/A	www.mgma.com
Academic Practice Compensation and Production Survey for Faculty and Management		N/A	www.mgma.com
Hospital Salary & Benefits Report	Surveys performed and published by the Hospital & Healthcare Compensation Service; John R. Zabka Associates, Inc.	N/A	www.hhcsinc.com/hcsreports.htm
Physician Salary Survey Report		N/A	www.hhcsinc.com/hcsreports.htm
Physician Compensation Survey Results	Surveys performed and published by Sullivan Cotter and Associates, Inc.	N/A	www.sullivancotter.com/surveys/purchase.php
Physician On-Call Pay Survey Report		N/A	www.sullivancotter.com/surveys/purchase.php
Physician Compensation and Productivity Survey Report		N/A	www.sullivancotter.com/surveys/purchase.php
Survey of Manager and Executive Compensation in Hospital and Health Systems		N/A	www.sullivancotter.com/surveys/purchase.php
Medical Group Executive Compensation Survey		N/A	www.sullivancotter.com/surveys/purchase.php
Physician Executive Compensation Survey	Survey performed and published by the American College of Physician Executives	N/A	www.acpe.org/membersonly/compensationsurvey/index.aspx?theme=c
Report on Medical School Faculty Salaries	Survey performed and published by the American Academy of Medical Colleges	N/A	https://services.aamc.org/publications/index.cfm?fuseaction=Product.displayForm&prd_id=252

Associations

Type of Association	Professional Association	Description	Citation	Contact Information
National	Medical Group Management Association (MGMA)	"MGMA provides the essential education, legislative information, and data and career resources to help improve patient services and operational efficiencies."	"About the Medical Group Management Association" Medical Group Management Association, www.mgma.com/about/about-mgma (Accessed 4/2/15).	Medical Group Management Association 104 Inverness Terrace East Englewood, CO 80112-5306 Phone: 303-799-1111 or 877-275-6462 E-mail: support@mgma.com www.mgma.com
National	American Academy of Medical Colleges (AAMC)	The AAMC "represent[s] all 141 accredited U.S. and 17 accredited Canadian medical schools; approximately 400 major teaching hospitals and health systems, including 51 Department of Veterans Affairs medical centers; and nearly 90 academic and scientific societies. Through these institutions and organizations, the AAMC represents 148,000 faculty members, 83,000 medical students, and 115,000 resident physicians."	"About the AAMC" American Academy of Medical Colleges, https://www.aamc.org/about/ (Accessed 4/2/15).	American Academy of Medical Colleges 655 K Street, NW, Suite 100 Washington, DC 20001-2399 Phone: 202-828-0400 www.aamc.org
National	American Group Management Association (AMGA)	"AMGA's mission is to support its members in enhancing population health and care for patients through integrated systems of care."	"About AMGA" American Group Management Association, https://www.amga.org/wcm/About/wcm/AboutAMGA/index_aboutAMGA.aspx?hkey=5712aaee-d162-4787-904b-e1fdafcd47e7 (Accessed 4/2/15).	American Group Management Association One Prince Street Alexandria, VA 22314-3318 Phone: 703-838-0033 Fax: 703-548-1890 www.amga.org

APPENDIX A

WAIT! THE COMPENSATION PLAN CHECKLIST[269]

- ☐ **Alignment with Internal Environment**
  - ☐ Have the goals of the proposed plan been outlined?
  - ☐ Does the proposed plan emulate the practice mission, vision, principles, and goals?
  - ☐ Does it strive for a balanced system of compensation?
- ☐ **Clear Performance Expectations**
  - ☐ Have minimum performance expectations been established?
  - ☐ Do these performance expectations take administrative, teaching, research-related, and/or other non-clinical activities into consideration?
- ☐ **Fiscally Reliable**
  - ☐ Is the practice afforded certain safeguards and securities in case the plan is unsuccessful?
  - ☐ Does the plan take into consideration the flow of money through the practice across both clinical and non-clinical activities?
  - ☐ Have future practice development, cash flow, reserves, and/or other needs been accounted for?
  - ☐ In the circumstance of a shortage, how will the compensation plan change? (Reduced base salaries? Supplement? Equivalent percentage or dollar? An algorithmic means?)
- ☐ **Legally Permissible**
  - ☐ Is the plan in compliance with Stark Law and Anti-Kickback Statute?
  - ☐ Is the plan in line with *fair market value* and *commercial reasonableness*?
  - ☐ Has up-to-date documentation been generated?
- ☐ **Clear and Consistent, With No Room for Convolution**
  - ☐ Is there a written plan?
  - ☐ Have specific rules and parameters been outlined?
  - ☐ For any potential areas of ambiguity that may arise, has some form of structure or ownership been delineated?
- ☐ **Simple: Easily Understood and Conveyed**
  - ☐ Will this plan easily be disseminated between and among practitioners and practice administrators?
- ☐ **Practice-Wide Transparency and Consistency**
  - ☐ Have a set of rules been established within the plan for practice-wide application?
  - ☐ Are quantifiable and replicable examples been included in the plan?
  - ☐ Does the plan call for perpetual reporting on the basis of management, productivity, efficiency, etc.?
- ☐ **Well-Weighted Individual and Group Accountability**
  - ☐ In what way does the plan allocate responsibility? On the basis of a team oriented culture? Weighted entirely on the individual? Both?

269 "Physician Compensation Plans: State-of-the-Art Strategies" by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 46.

APPENDIX B

SAMPLE ANALYSIS OF COMPENSATION—GENERAL SURGERY

Table 1: Range of Annual Total Compensation (Excluding Trauma Call Coverage) per Level of Work RVU Productivity

Work RVUs[1]	Compensation per Work RVU[2]	Base Cash Compensation[3]	Incentive Compensation per Work RVU above 8,500[4]	Productivity Incentive Payment[5]	Total Productivity Cash Compensation[6]	Quality Incentive Payment[7]	Total Cash Compensation[8]	Total Nose Coverage Cost[9]	Annual Nose Coverage Cost[10]	Total Annual Compensation[11]	Total Compensation per Work RVU—Excluding Trauma Call[12]
5,000	$45.00	$225,000	$0.00	$0	$225,000	$20,000	$245,000	$82,000	$16,400	$261,400	$52.28
6,000	$45.00	$270,000	$0.00	$0	$270,000	$20,000	$290,000	$82,000	$16,400	$306,400	$51.07
7,000	$45.00	$315,000	$0.00	$0	$315,000	$20,000	$335,000	$82,000	$16,400	$351,400	$50.20
9,000	$45.00	$405,000	$10.00	$5,000	$410,000	$20,000	$430,000	$82,000	$16,400	$446,400	$49.60
11,000	$45.00	$495,000	$10.00	$25,000	$520,000	$20,000	$540,000	$82,000	$16,400	$556,400	$50.58

Table 2: Industry Annual Work RVU Production (wRVU)

	Notes	N=	Survey Weight of Consideration[17]	25th Percentile	Median	Mean	75th Percentile	90th Percentile
MGMA WRVU—ALL	(13)	912	33%	5,296	6,880	7,271	9,023	11,021
AMGA WRVU—ALL	(14)	960	33%	4,981	6,942	7,304	9,394	10,961
Sullivan Cotter WRVU—ALL	(15)	736	33%	5,277	6,764	7,221	8,594	10,815
Weighted Average Industry Annual WRVU Production	(16)		100%	5,185	6,862	7,265	9,004	10,932

Table 3: Industry Annual Compensation per Work RVU

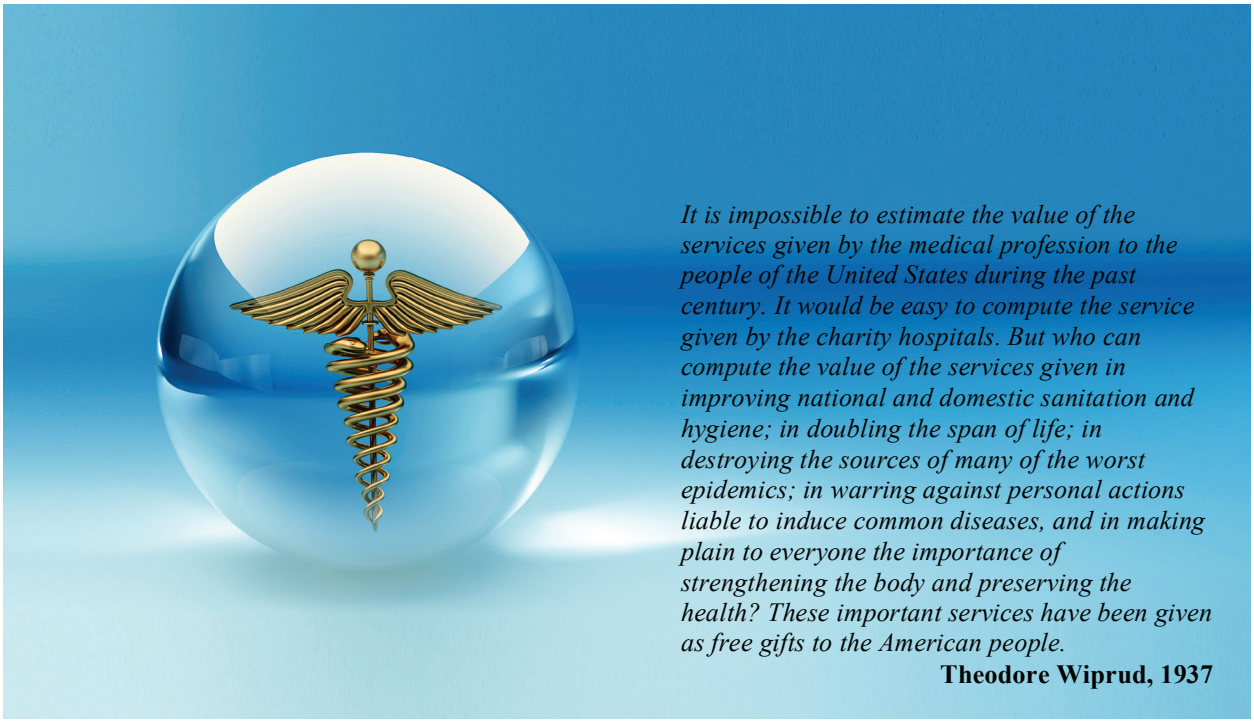
	Notes	N=	Survey Weight of Consideration[17]	25th Percentile	Median	Mean	75th Percentile	90th Percentile
MGMA Comp/WRVU—ALL	(13)	894	33%	$45.89	$56.23	$60.14	$67.96	$88.11
AMGA Comp/WRVU—ALL	(14)	949	33%	$43.36	$54.70	$57.95	$70.13	$81.01
Sullivan Cotter Comp/WRVU—ALL	(15)	736	33%	$43.29	$52.45	$53.93	$61.82	N/A
Weighted Average Industry Compensation per Work RVU	(16)		100%	$44.18	$54.46	$57.34	$66.64	$84.56

Notes:

1 Hypothetical total annual work RVUs to be performed by employed physicians.
2 According to hypothetical agreements, employed physicians will be compensated $45.00 for each work RVU generated.
3 Calculated base cash compensation given work RVU production in Column A, multiplied by compensation per work RVU in Column B ($45 per work RVU).
4 Per hypothetical agreements, employed physicians will be compensated an incentive amount of $10.00 for each work RVU generated above 8,500.
5 Calculated as the number of work RVUs above 8,500 (i.e., Column A - 8,500) multiplied by the incentive compensation per work RVU (i.e., Column D, $10.00 per work RVU above 8,500).
6 Total productivity payment calculated as the base productivity payment (Column C) plus the incentive productivity payment (Column E).
7 Per hypothetical agreements, employed physicians will be compensated for meeting established quality of care and patient satisfaction performance measures of up to $20,000 per each year of the Employment Term.
8 Total cash compensation calculated as the sum of the base productivity compensation (Column C), the incentive productivity compensation (Column E), and the quality incentive compensation (Column G).
9 Total nose coverage cost to subject enterprise per employed physician.
10 One-fifth of nose coverage cost (Column J) (assuming amortization of nose coverage cost over five-year employment agreement).
11 Total Annual Compensation calculated as the sum of the total cash compensation (Column H) and the annual nose coverage cost (Column J).
12 Calculated proposed total annual compensation (Column K) divided by Work RVUs generated (Column A).
13 Medical Group Management Association (MGMA) "Physician Compensation and Production Survey 2013 Report Based on 2012 Data."
14 American Medical Group Association (AMGA) "2013 Medical Group Compensation and Financial Survey: 2013 Report Based on 2012 Data." Note that AMGA reports the 80th and 20th percentiles, rather than the 75th and 25th percentiles.
15 Sullivan Cotter and Associates, Inc. "2013 Physician Compensation and Productivity Survey Report."
16 Weighted average industry annual work RVU production based upon survey weight of consideration (Column D).
17 Survey weight of consideration based upon geographical location and number of survey responses.

Chapter 4

Financial Valuation of Enteprises, Assets, and Services



It is impossible to estimate the value of the services given by the medical profession to the people of the United States during the past century. It would be easy to compute the service given by the charity hospitals. But who can compute the value of the services given in improving national and domestic sanitation and hygiene; in doubling the span of life; in destroying the sources of many of the worst epidemics; in warring against personal actions liable to induce common diseases, and in making plain to everyone the importance of strengthening the body and preserving the health? These important services have been given as free gifts to the American people.

Theodore Wiprud, 1937

KEY TERMS

Capitalization Rate
Cash Flow
Control Premium
Cost of Capital
Discount for Lack of Control
Discount for Lack of Marketability
Discount Rate
Equity Risk Premium
Excess Earnings
Forced Liquidation Value
Going Concern Value
Goodwill
Intangible Assets
Invested Capital
Investment Value
Liquidation Value
Liquidity
Market Multiple
Net Book Value
Orderly Liquidation Value
Premise of Value
Standard of Value
Tangible Assets
Valuation Date
Value in Exchange
Value in Use
Weighted Average Cost of Capital

Key Concept	Definition	Citation	Concept Mentioned on Page #
Asset (Asset-Based) Approach	A general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 25.	181
Capitalization of Earnings Method	A method within the income approach whereby economic benefits for a representative single period are converted to value through division by a capitalization rate.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 26.	164
Cost Approach	A general way of determining a value indication of an individual asset by quantifying the amount of money required to replace the future service capability of that asset.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 26.	181
Discounted Cash Flow Method	A method within the income approach whereby the present value of expected net cash flows is calculated using a discount rate.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 27.	163–164
Excess Earnings Method	A specific way of determining a value indication of a business, business ownership interest, or security determined as the sum of (1) the value of the assets derived by capitalizing excess earnings and (2) the value of the selected asset base; also frequently used to value intangible assets.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 27.	182
Guideline Public Company Method	A method within the market approach whereby market multiples are derived from market prices of stocks of companies that are engaged in the same or similar lines of business and that are actively traded on a free and open market.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 28.	177–180
Income (Income-Based) Approach	A general way of determining a value indication of a business, business ownership interest, security, or intangible asset using one or more methods that convert anticipated economic benefits into a present single amount.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 28.	163
Market (Market-Based) Approach	A general way of determining a value indication of a business, business ownership interest, security, or intangible asset by using one or more methods that compare the subject to similar businesses, business ownership interests, securities, or intangible assets that have been sold.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 29.	173
Merger and Acquisition Method	A method within the market approach whereby pricing multiples is derived from transactions of significant interests in companies engaged in the same or similar lines of business.	"ASA Business Valuation Standards," American Society of Appraisers, 2008, p. 30.	175–176

OVERVIEW

Many events may set the stage for the valuation (appraisal) of healthcare enterprises, assets, or services, with the scope of valuation services ranging from comprehensive, formal, written reports with certified opinions to limited, restricted use analyses and valuation consultations, as well as valuation review.

Opinions of value related to healthcare enterprises may be provided in both the for-profit and tax-exempt arenas for the purposes of sale or transfer, merger and acquisition, lending and capital formation, or liquidation and dissolution. These services may also be provided for management planning, insurance claims, gift and estate tax planning, and for other related purposes.

In addition to healthcare enterprise valuations, opinions of value may be provided related to the valuation of two types of assets:

(1) **Tangible assets**, which may be defined as, "…physical assets (such as …inventory, property, plant and equipment, and so on),"[1] as well as financial assets[2], e.g., cash, accounts and notes receivables, pre-paid expenses, and intercorporate investments;[3] and
(2) **Intangible asset**s, which may be defined as, "… [a] nonphysical business asset that grants certain rights and privileges ([e.g.,] copyright, trade names, services marks, brand names, etc.) that have business enterprise economic value for owners. It is an asset without physical form, such as a patent, trademark, physician goodwill, or copyright."[4]

In addition, within the ever-changing regulatory environment in which healthcare enterprises and providers operate, transactions involving the integration of physicians, spanning the range of affiliations in independent practice associations to direct employment by hospitals and other healthcare enterprises, are being more closely scrutinized. Therefore, a certified opinion regarding the Fair Market Value (FMV) and Commercial Reasonableness (CR) of compensation arrangements between physician providers and enterprises that employ these providers (often tax-exempt hospital organizations) is often required to withstand scrutiny from state and federal agencies regarding the stringent statutory requirements set forth in Anti-Kickback Statute, Stark law, tax-exempt regulations, and other related laws, rules, and regulations that govern services compensation in the healthcare industry.

Due to the complex and dynamic nature of the healthcare industry, valuations of healthcare-related enterprises, assets, and services is a rapidly growing area of consultancy. The subsequent sections of this chapter will attempt to provide guidance to the valuation professional tasked with determining the economic benefit to be derived from the ownership or control of various healthcare-related enterprises, assets, and services.

1 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon Pratt, 5th ed., New York, NY: McGraw-Hill, 2008, p. 1074.
2 Note that, the typical definition of an intangible asset would include financial assets, e.g., stocks and bonds; however, accountants usually classify financial assets as "tangibles." "Financial Accounting: An Introduction to Concepts, Methods, and Uses," By Clyde P. Stickney, et al., South-Western Cengage Learning, Mason, OH (2010), p.879.
3 International Financial Reporting Standards (IFRS), IAS 32.11 defines financial assets as (1) cash; (2) an equity instrument of another entity; (3) a contractual right to receive cash or another financial asset from another entity; (4) a contractual right to exchange financial assets or financial liabilities with another entity under conditions that are favorable to the entity; or, (5) a contract that will or may be settled in the entity's own equity instruments (under certain other circumstances)
4 "Dictionary of Health Economics and Finance" By David Edward Marcinko, New York, NY: Springer Publishing Company, LLC, 2007, p. 197; See the Classification and Valuation of Assets section below for further discussion of tangible and intangible assets.

VALUATION STEPS TO COMPLETE A TYPICAL VALUATION ENGAGEMENT[5]

Prior to beginning a valuation, the valuation analyst should consider the following broad concepts at the outset of every engagement:

(1) No single approach, method, or combination thereof is universally applicable to every valuation engagement. Each case must be considered as a unique exercise of informed judgment based upon careful analysis and supported by documented evidence and reasoned argument;
(2) Each valuation endeavor should be considered within the context of the idea that "our process is our product." The valuation process does not lend itself to *ad hoc* decision making;
(3) A valuation analyst does well to remember the concept of "form before function," as well as the admonition of "the six Ps," that is "Proper Prior Planning Prevents Poor Performance;" and
(4) The appraiser must "know the business," that is, he or she must have a thorough understanding of the healthcare industry and market sector within which the subject enterprise exists and operates.

In consideration of these concepts as all-encompassing tenets of the valuation engagement, the following sections discuss the steps of a valuation project. Note that a more formal description of the valuation engagement process is discussed in Chapter 1: *Healthcare Consulting* in *Consulting with Professional Practices*.

DEFINING THE VALUATION ENGAGEMENT: RANGE OF VALUATION ASSIGNMENTS AND REPORT CONTENTS

At the outset of a valuation assignment, the valuation analyst should match the deliverables of the valuation assignment to the specific purpose, objective, use, and any other special requirements of the project.

In addition, two basic, yet distinct elements in defining the valuation engagement also should be considered:

(1) *The range* of valuation assignments, which may include a written or oral appraisal report, appraisal consulting, or appraisal review; and
(2) *The scope* of the valuation report, which under the *2014-2015 Uniform Standards of Professional Appraisal Practice and Advisory Opinions* (USPAP) Scope of Work Rule, it is noted that for each appraisal, appraisal review, or appraisal consulting assignment, an appraiser must:

5 The material for this section is adapted from "Valuation of Healthcare Ancillary Services Providers" By Robert James Cimasi, Health Capital Consultants, National Association of Certified Valuation Analysts Consultants' Training Institute: San Diego, CA, December 12, 2008.

(a) Identify the problem to be solved;
(b) Determine and perform the scope of work necessary to develop credible assignment results; and
(c) Disclose the scope of work in the report.[6]

An appraiser must properly identify the problem to be solved in order to determine the appropriate scope of work. The appraiser must be prepared to demonstrate that the scope of work is sufficient to produce credible assignment results.

Scope of work includes, but is not limited to:

(1) The extent to which the property is identified;
(2) The extent to which tangible property is inspected;
(3) The type and extent of data researched; and
(4) The type and extent of analyses applied to arrive at opinions or conclusions.

PRE-ENGAGEMENT

Pre-engagement steps for a valuation assignment require consideration of several definitions and project parameters to fully denote the scope and purpose of the engagement prior to beginning work related to the project. For example, it is necessary to:

(1) Identify all parties involved in the engagement and whether there exist any conflicts of interest for the appraiser;
(2) Determine a definition and detailed description of the enterprise and interest being appraised;
(3) Determine the nature, objective, and use of appraisal and the standard of value and premise of value to be used in the course of the engagement (which for healthcare-related assignments may be more complex than in other industries, as further discussed below); and
(4) Determine the effective date, or "as of" date for which the value is being determined.

Typical examples of project parameters that should be established at the outset of the engagement include the:

(1) Scope of assignment;
(2) Timetable for appraisal;
(3) Type of report to be issued;
(4) Schedule of fees;
(5) Any hypothetical conditions (that is, assumptions contrary to that which exist but, for the purposes of the report, have been, at the direction of the client, assumed to be that which would typically be expected by the universe of typical acquirers in a transfer of the enterprise interest); and
(6) The assumptions and limiting conditions relevant to the project and valuation.

6 "Uniform Standards of Professional Appraisal Practice," Appraisal Standards Board, January 1, 2014, p. U-13.

DURING THE ENGAGEMENT

Gathering Necessary Data

An appraiser may collect two types of data for a valuation project, which include:

(1) *General data*, which consists of general industry research and information relative to the economic, demographic, industry, competition, healthcare industry, and medical specialty trends and managed care environments surrounding the subject entities, as well as transactional data, investment risk or return information, and market environment reports; and
(2) *Specific data*, which consists of data specific to, and obtained from, the subject entities, including, but not limited to financial statements, tax returns, productivity reports, supply inventories, accounts receivable schedules, payor mix, fixed asset schedules, service agreements, prior valuation or consulting reports, budgets and projections, and documentation on transactions involving the subject enterprise.

Data regarding the subject enterprise appropriate for the engagement may be obtained via submission of written documents and materials requests prior to site visits, phone interviews, or questionnaires. The opinion of value determined in the engagement will depend on the availability, completeness, accuracy, and reliability of this information.

Preparing and Submitting the Valuation Report

The next steps of the valuation engagement will typically include selection of an appropriate valuation method and analysis of the gathered data, methods for which are discussed further in *Valuation Approaches, Methods, and Techniques*. After a preliminary draft report is reviewed by the client for any factual errors of omission or commission, the report is quality checked via internal review, then a signed and sealed certification report may be submitted to the client.

POST-ENGAGEMENT

After submitting the final valuation report in full to the client, the appraiser should conduct a post-engagement review of the project with the client for the purposes of evaluating the quality of work for future engagements and for the purpose of obtaining reference permission from the client. Additionally, it is essential that all workpapers, data sources, and other engagement-related documents be retained " . . . for a period of at least five (5) years after preparation or at least two (2) years after final disposition of any judicial proceeding in which the appraiser provided testimony related to the assignment, whichever period expires last."[7] This is done for safekeeping and potential use or in the event of a dispute.

7 "Uniform Standards of Professional Appraisal Practice," Appraisal Standards Board, January 1, 2008, p. U-9.

BASIC ECONOMIC VALUATION TENETS: VALUATION OF HEALTHCARE ENTERPRISES

There are a wide variety of enterprises that operate in the healthcare industry. These include various types of *inpatient facilities*, such as hospitals and long-term care facilities, as well as a number of *outpatient facilities*, such as ambulatory surgery centers, diagnostic imaging centers, urgent care facilities, and physician practices. While the focus of this guide is on outpatient physician practices, these enterprises may have components of other types of businesses that are intertwined with the professional practice. For example, some physician practices offer in-office diagnostic testing and other ancillary services in addition to their professional physician services. Therefore, knowledge and understanding of the valuation of other types of healthcare enterprises may be required for the valuation of a specific physician practice.

Part of the knowledge and information needed to competently value any enterprise is a solid understanding of the underlying value drivers and market forces that influence the industry in which the subject enterprise operates. In healthcare, the key value drivers and market forces can be ascertained by observing the industry through the construct of the four pillars, i.e., Reimbursement, Regulation, Competition, and Technology.[8] While the four pillars construct has been discussed in previous chapters, this chapter will discuss the selection and application of the approaches and methodologies typically utilized in the valuation of professional practice enterprises, assets, and services in light of the identified and analyzed key value drivers and market forces that impact their value.

Market perceptions of value of an enterprise are based not only on investors' knowledge of the historical and existing environment, but also more importantly on the anticipated trends of the industry sector and transactional or capital marketplace within which the subject professional practice enterprise operates. An understanding of the importance of trends as related to the valuation process is illustrated by the following basic valuation tenets:

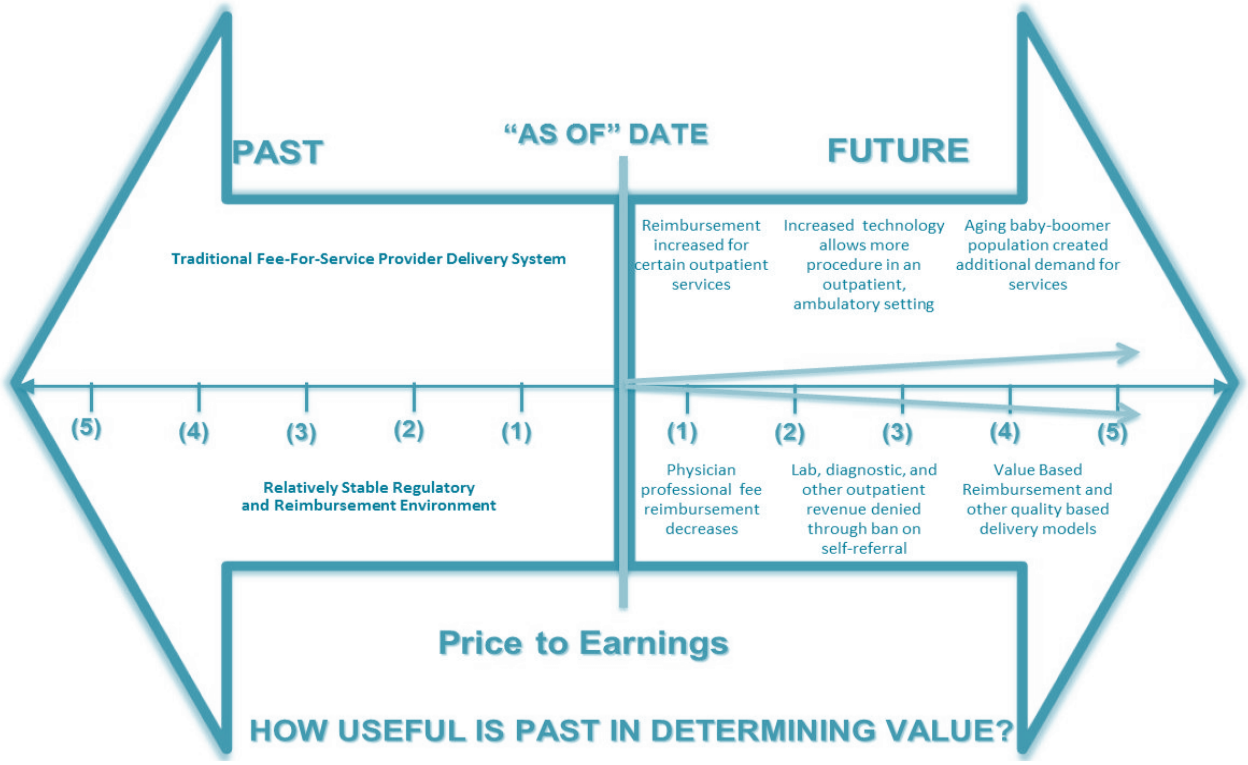
- All value is the expectation of future benefit; therefore, value is forward looking.
- The best indicator of future performance is usually the performance of the immediate past.
- Historical accounting and other data are useful primarily as a road map to the future.

In the past, professional practice valuation methodologies relied heavily upon the analysis of historical accounting and other data as predictive of performance and value. Increasingly, however, circumstances surrounding the professional practice's specific specialty and the market within which it operates may have the potential to make the historical information a less reliable indicator of the practice's future financial performance. The turbulent status of the healthcare industry during the past three decades has introduced intervening events and circumstances that may have a dramatic effect on the projection of future revenue, economic operating cost burdens, and/or economic capital cost burdens for the subject professional practice. In that event, the "road map of historical performance" becomes less predictive of future performance. An

8 See Chapters 2, 3, 4, and 5 of *An Era of Reform—The Four Pillars*, respectively.

illustration of how events may change a valuation analyst's prediction of a subject professional practice's performance is set forth in the following Figure 4-1.

Figure 4-1: Reliance on Historical Data for Valuations

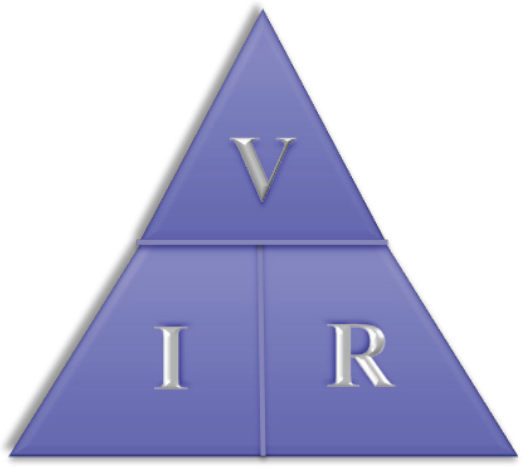


THE VALUE PYRAMID

Key *value drivers* of professional practice enterprises may be viewed within the context of the following *Value Pyramid* (Figure 4-2), which sets forth the financial valuation of these enterprises generally by illustration of the two (2) distinct determinants of value: *"I",* the determination of the appropriate economic income, earnings, or net benefit stream for the subject enterprise; and, *"R",* the development and selection of the appropriate risk-adjusted required rate of return (typically expressed as a discount rate, capitalization rate, or valuation multiple), to apply to the net benefit stream selected.[9]

9 For further discussion of calculations related to *I* and *R*, see *Developing a Forecast and Net Economic Benefit: Projection of Net Cash Flow* and *Cost Capital: Developing the Risk-Adjusted Required Rate of Return,* respectively.

Figure 4-2: The Value Pyramid

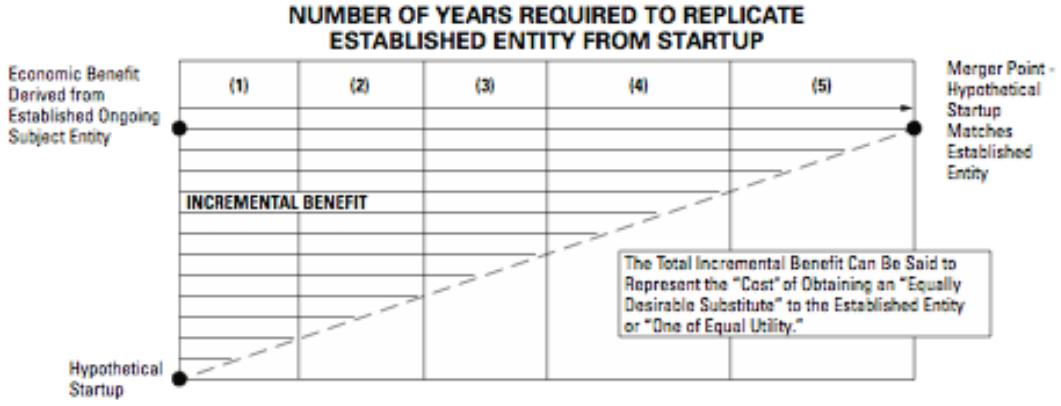


- "I" – Economic Benefit Stream, e.g., Income, Earnings, Cash Flow as defined by appraiser and appropriate to assignment
- "R" – Risk Adjusted Required Rate of Return applicable to selected benefit stream, e.g., Discount Rate, Cap Rate, Multiple Valuation
- "V" – Economic Value of the Enterprise

BUY OR BUILD?—VALUE AS AN INCREMENTAL BENEFIT

Another important value concept is driven by the economic principle of substitution, which states that the cost of an equally desirable substitute (or one of equivalent utility) tends to set the ceiling of value, which is the maximum price that a knowledgeable buyer would be willing to pay for a given asset or property. As applied to the valuation of professional practices, this concept is embodied in selecting and applying valuation methods in a manner that recognizes that the Fair Market Value is the aggregate present value of all future benefits of ownership or control to be derived in excess of (and incremental to) the level of net economic benefit that may be projected to accrue from an alternative, hypothetical start-up enterprise of the same type, setting, format, and location. This benefit of *"buying"* rather than *"building"* is referred to as *incremental benefit.* Figure 4-3 illustrates the concept of total incremental benefit.

Figure 4-3: Total Incremental Benefit



The *"equally desirable substitute"* that is required by the principle of substitution may be more difficult to hypothesize or project at a time when historical trends and assumptions may no longer be deemed valid by prospective purchasers or investors. Measuring the depth of the marketplace's perception regarding the probability of success for start-ups being diminished by reimbursement and regulatory pressures is subject to similar uncertainties.

THE STANDARD OF VALUE AND PREMISE OF VALUE

Understanding financial valuation concepts is important in order for valuation analysts to create the foundation for a well-reasoned and defensible valuation analysis.[10] It is critical to appropriately define the standard of value and premise of value to be employed in developing the valuation opinion at the beginning of every engagement.[11] The standard of value defines the type of value to be determined and answers the question, *"value to whom?"* Several standards of value may be sought by the valuation analyst, including:

(1) *Fair Market Value;*
(2) *Fair Value;*
(3) *Investment Value;* and/or
(4) *Fundamental (Intrinsic) Value.*[12]

However, due to regulatory edicts contained within the Internal Revenue Code (IRC), Stark Law, Anti-Kickback Statute, and False Claims Act, most types of healthcare transactions are required to adhere to the standard of Fair Market Value.

The Standard of Value and the Universe of Typical Buyers

In general business valuation terminology, Fair Market Value is defined as:

> "…the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."[13]

For purposes of healthcare valuation, the standard of Fair Market Value is further defined by the IRC, Stark Law, and Anti-Kickback Statute as follows:

(1) The IRC and accompanying Treasury Regulations, IRS revenue rulings and other IRS gives guidance pertaining to *Fair Market Value* for transactions involving tax-exempt organizations, e.g., in an excess benefit transaction:

10 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 17-18, 26.
11 Ibid, p. 17.
12 Ibid, p. 17-18.
13 "ASA Business Valuation Standards," American Society of Appraisers, http://www.appraisers.org/docs/default-source/discipline_bv/bv-standards.pdf?sfvrsn=0 (Accessed 8/29/14), p.27.

(a) "the general rule for the valuation of property, including the right to use property, is Fair Market Value (i.e., the price at which property or the right to use property would change hands between a willing buyer and willing seller, neither being under any compulsion to buy, sell or transfer property or the right to use property, and both having reasonable knowledge of relevant facts);"[14]
   i. An "excess benefit transaction" is a "transaction in which an economic benefit is provided by an applicable tax-exempt organization, directly or indirectly, to or for the use of a disqualified person, and the value of the economic benefit provided by the organization exceeds the value of the consideration received by the organization;"[15]

(b) The hypothetical transaction contemplates a universe of typical potential purchasers for the subject property and not a specific purchaser or specific class of purchaser;[16]

(c) Buyer and seller are typically motivated;[17] and

(d) Both parties are well informed and acting in their respective rational economic self-interests.[18]

(2) The Stark Law and accompanying regulations define *Fair Market Value* as:

(a) The "value in arm's length transactions, consistent with the general market value. 'General Market Value' means the price that an asset would bring as the result of bona fide bargaining between well-informed buyers and sellers who are not otherwise in a position to generate business for the other party…";[19]

(b) The most probable price that the subject interest should bring if the interest were made available for sale on the open market, as of the valuation date, but exclusive of any element of value arising from the accomplishment or expectation of the sale.[20] This standard of value assumes an anticipated hypothetical transaction, in which the buyer and seller are each acting prudently, each with a reasonable equivalence of knowledge in relation to the other, and that the price is not affected by any undue stimulus or coercion;[21] and

(c) An anticipated hypothetical transaction conducted in compliance with *Stark I & II* legislation prohibiting physicians from making referrals for "designated health services" reimbursable under Medicare or Medicaid to an entity with which the referring physician has a financial relationship.[22]

(3) The Anti-Kickback Statute requires the payment of "Fair Market Value in arms-length transactions…[and that any compensation is] not determined in a manner that takes into account the volume or value of any referrals or business otherwise generated between the parties for which payment may be made in whole or in part under Medicare, Medicaid or other Federal health care programs."[23]

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14 "Intermediate Sanctions—Excess Benefit Transactions," Internal Revenue Service, Aug. 28, 2014, http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/Intermediate-Sanctions-Excess-Benefit-Transactions (Accessed 8/29/14).

15 Ibid.

16 Investment Value may be defined as: "…the specific value of an investment to a particular investor or class of investors based on individual investment requirements; distinguished from market value, which is impersonal and detached." "The Dictionary of Real Estate Appraisal" The Appraisal Institute, 4th ed., 2002, p. 152.

17 "Revenue Ruling 59-60, 1959-1" Internal Revenue Service, Cumulative Bulletin, p. 237.

18 Ibid.

19 "Definitions" 42 C.F.R. § 411.351 (2009).

20 "Limitation on Certain Physician Referrals" 42 U.S.C. § 1395nn(b)-(e) (2012); "General exceptions to the referral prohibition related to both ownership/investment and compensation" 42 C.F.R. § 411.355(a)-(i) (2011); "Exceptions to the referral prohibition related to ownership or investment interests" 42 C.F.R. § 411.356(a)-(c) (2010); "Exceptions to the referral prohibition related to compensation arrangements" 42 C.F.R. § 411.357(a)-(p) (2010).

21 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services " By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p.18.

22 "Limitation on Certain Physician Referrals" 42 U.S.C. § 1395nn(a) (2012).

23 "Exceptions" 42 C.F.R. § 1001.952(d)(5) (2015).

The standard of Fair Market Value is separate and distinct from other standards of value, e.g.:

(1) The standard of Fair Value for financial reporting, as required by generally accepted accounting principles and the Securities Exchange Commission, has been defined by the Financial Accounting Standards Board (FASB) as: "…the price that would be received to sell an asset or paid to transfer a liability [an exit price] in an orderly transaction between market participants at the measurement date;"[24]
(2) The standard of Investment Value may be defined as "…the *specific* value of an investment to a *particular* investor or class of investors based on individual investment requirements; distinguished from market value, which is impersonal and detached"[25] [Emphasis added]; and
(3) The concept of Fundamental (or Intrinsic) Value "…represents an analytical judgment of value based on the perceived characteristics inherent in the investment, not tempered by characteristics peculiar to any one investor, but rather tempered by how these perceived characteristics are interpreted by one analyst versus another."[26]

Also, there may be many valid reasons for the Investment Value of the subject interest to a given owner or prospective owner to differ from the Fair Market Value of that same subject interest, including such reasons as:

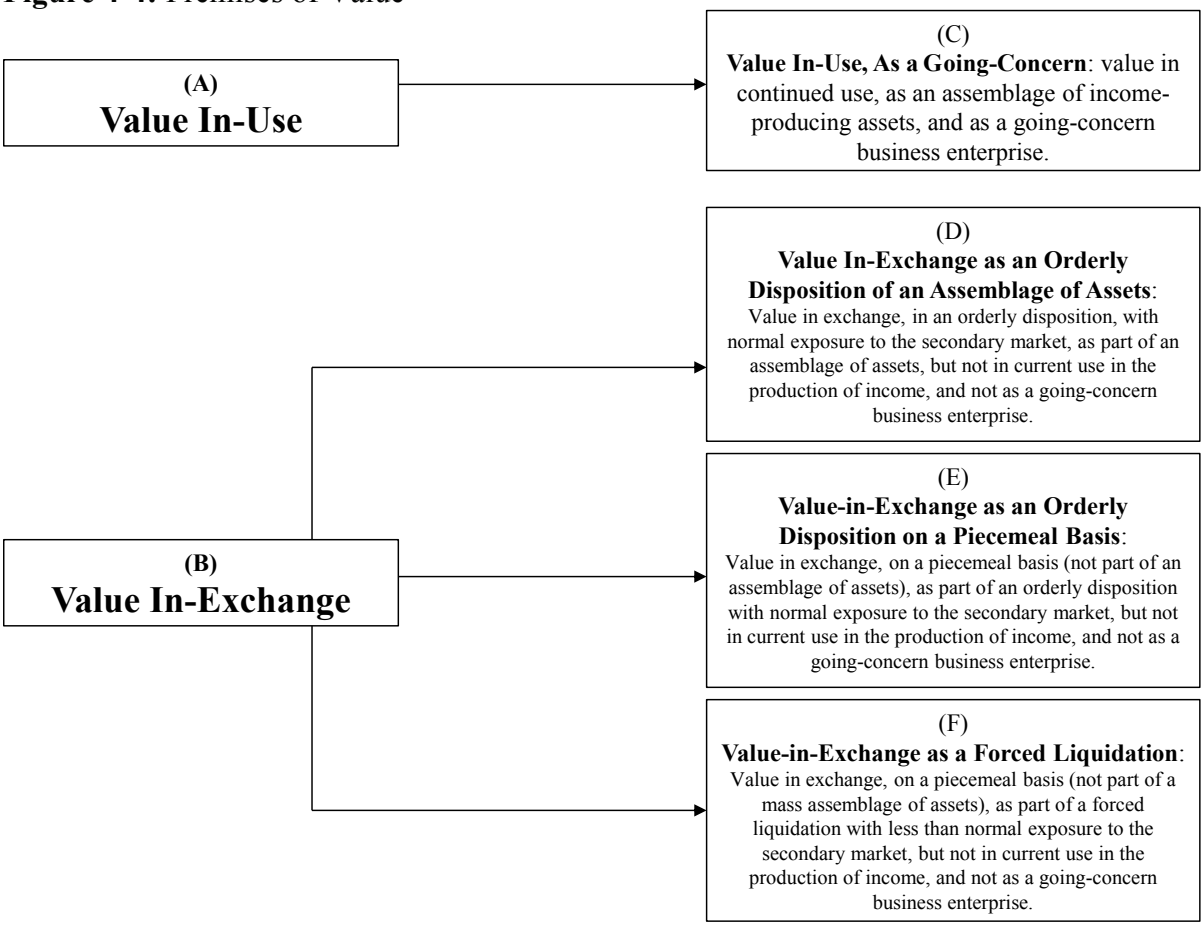
(1) "Differences in estimates of future earning power,
(2) Differences in perception of the degree of risk and the required rate of return,
(3) Differences in financing costs and tax status, and
(4) Synergies with other operations owned or controlled."[27]

The Premise of Value

In addition to identifying the standard of value to be used in the valuation engagement, it is imperative that the premise of value, i.e., an assumption further defining the standard of value to be used and under which a valuation is conducted, also be determined at the outset of the valuation engagement. The premise of value defines the hypothetical terms of the sale, i.e., "…the most likely set of transactional circumstances that may be applicable to the subject valuation; e.g., going concern, liquidation,"[28] and answers the question of "value under what further defining circumstances?" The selection of the premise of value can have a significant effect on its application in the valuation process. As set forth in Figure 4-4, below, two general concepts relate to the consideration and selection of the premise of value: (1) value in-use and (2) value in-exchange.

24 "Statement of Financial Accounting No, 141: Business Combinations," Financial Accounting Standards Board, December 2007, p. 2.
25 "The Dictionary of Real Estate Appraisal" The Appraisal Institute, 4th ed., 2002, p. 152.
26 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon Pratt, 5th ed., New York, NY: McGraw-Hill, 2008, p. 44.
27 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 24-25; "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon Pratt, 5th ed., New York, NY: McGraw-Hill, 2008, p. 43.
28 "Appraisal and Valuation: An Interdisciplinary Approach, The Principles and Concepts of Valuation: Theory of Utility and Value, Value Influences, and Value Concepts" By Richard Rickert, Vol. 1, Washington, D.C.: American Society of Appraisers, 1987, p. 6-7.

Figure 4-4: Premises of Value



Value In-Use

Value in-use is the premise of value that assumes that the assets will continue to be used as part of an ongoing business enterprise, producing profits as a benefit of ownership of a going concern. As defined by Dr. Shannon Pratt, CEO of Shannon Pratt Valuations, Inc.: "Value as a going concern," is "value in continued use, as a mass assemblage of income-producing assets, and as a going-concern business enterprise."[29] It should be noted that in order to use the *premise* of value in-use as a going concern:

(1) There must be a reasonable likelihood that the subject enterprise will generate sufficient net margin to generate an economic cash flow;
(2) There must be a reasonable likelihood that this would occur in the reasonably foreseeable future; and
(3) The cash flow must be supported by the tangible assets utilized to generate the revenue stream and support the value of the investment.[30]

29 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon Pratt, 5th ed., New York, NY: McGraw-Hill, 2008, p. 47.
30 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 27.

Value In-Exchange

It should be noted that in the absence of a reasonable expectancy of sufficient economic cash flow to support the value of the investment represented by the tangible assets utilized to generate the revenue stream of the enterprise, the *highest and best use* of the assets may be under, and the appraiser may select, a *premise of value* of *value in-exchange,* e.g., "Value In-Exchange as an orderly disposition of a mass assemblage of assets, in place," which includes all individually identifiable tangible and intangible assets.[31]

The concept of highest and best use is defined as:

> "…that use among possible alternatives which is legally permissible, socially acceptable, physically possible, and financially feasible, resulting in the highest economic return."[32]

As Pratt points out, the concept of highest and best use drives the selection of the valuation premise, to wit:

> "Each of these alternative premises of value may apply under the same standard, or definition, of value. For example, the Fair Market Value standard calls for a 'willing buyer' and a 'willing seller.' Yet, these willing buyers and sellers have to make an informed economic decision as to how they will transact with each other with regard to the subject business. *In other words, is the subject business worth more to the buyer and the seller as a going concern that will continue to operate as such, or as a collection of individual assets to be put to separate uses?* In either case, the buyer and seller are still 'willing.' And, in both cases, they have concluded a set of transactional circumstances that will maximize the value of the collective assets of the subject business enterprise"[33] [Emphasis added].

Dr. Pratt goes on to explain that,

> "…[t]ypically, in a controlling interest valuation, the selection of the appropriate premise of value is a function of the *highest and best use* of the collective assets of the subject business enterprise. The decision regarding the appropriate premise of value is usually made by the appraiser, based upon experience, judgment and analysis"[34] [Emphasis added].

Other guidance related to the concept of *highest and best use* can be found in the USPAP, as promulgated by *The Appraisal Standards Board* of *The Appraisal Foundation*, which is a codification of the standard practices to be utilized within the practice of appraisal and was

31 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" by Robert James Cimasi, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 28-31.
32 "Appraisal and Valuation: An Interdisciplinary Approach, The Principles and Concepts of Valuation: Theory of Utility and Value, Value Influences, and Value Concepts" By Richard Rickert, Vol. 1, Washington, D.C.: American Society of Appraisers, 1987, p. 55.
33 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon Pratt, 5th ed., New York, NY: McGraw-Hill, 2008, p. 48.
34 Ibid.

created for the purpose of promoting and maintaining a high level of public trust in appraisal practice by establishing requirements for appraisers.[35]

According to Standards Rule 9-3 of USPAP:

> "In developing an appraisal of an equity interest in a business enterprise with the ability to cause liquidation, an appraiser *must* investigate the possibility that the business enterprise may have a *higher value by liquidation of all or part of the enterprise than by continued operation as is"*[36] [Emphasis added].

This point is further elucidated in the *comment* to USPAP Standards Rule 9-3:

> *"*This Standards Rule *requires* the appraiser to recognize that the continued operation of a business is not always the *best premise of value because liquidation of all or part of the enterprise may result in a higher value"*[37] [Emphasis added].

As illustrated above, the *highest and best use* of the invested capital in a given enterprise may not be in its continued use as a going concern but may, in fact, be in-exchange, either as an orderly disposition of the assets or in liquidation. In either sense, it should be noted that the decision to utilize the premise of value in-exchange, in contrast to that of value in-use, does not preclude the existence of a requisite valuation of the value of intangible assets. Intangible assets may well exist and hold significant economic value under the premise of value-in-exchange.

As stated by James Zukin:

> "The underlying asset approach considers the component parts of a business enterprise…[and] can be [performed] on either a net liquidation basis or by using the value of the underlying assets in continued use. The former basis is normally applicable when there is a distinct possibility that the business is worth more 'dead' than 'alive.' While the latter basis is normally applicable when there is little possibility of liquidation."[38]

Zukin goes further in clarifying the existence of intangible assets by stating:

> "…the market value [of a business enterprise] cannot be lower than the net liquidation value of the [enterprise's underlying assets]…and [a]nother asset area requiring examination [when using the underlying asset approach] is [including the value of] the separately identifiable intangible assets."[39]

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35 Preamble to the 2014—2015 Uniform Standards of Professional Appraisal Practice published by the Appraisal Standards Board of the Appraisal Foundation, p. U-5.

36 Standard 9 of the 2014—2015 Uniform Standards of Professional Appraisal Practice published by the Appraisal Standards Board of the Appraisal Foundation, p. U-62.

37 Ibid.

38 "Financial Valuation: Businesses and Business Interests" By James H. Zukin, New York, NY: Maxwell MacMillan, 1990, ¶ 2.10., p. 42-44.

39 "Financial Valuation: Businesses and Business Interests" By James H. Zukin, New York, NY: Maxwell MacMillan, 1990, ¶ 2.10., p. 42-44; See *Classification and Valuation of Assets* section below for discussion of the classification and valuation of tangible and intangible assets.

THE THRESHOLD OF COMMERCIAL REASONABLENESS

While the analysis of the threshold of CR is separate and distinct from the development of a FMV analysis, requiring consideration of different aspects of the property interest included in the transaction, they are *related* thresholds, and the consideration and analysis of one threshold does *not* preclude the analysis of the other threshold. For example, a necessary condition for an anticipated transaction to be *commercially reasonable* is that each element of that transaction must not exceed FMV. However, even in the event that each element of an anticipated transaction does not exceed FMV, the anticipated transaction may still *not* be *commercially reasonable* in that it does not meet the remaining analytical hurdles of a CR analysis. Consequently, a finding that an enterprise, asset, or service meets the FMV threshold is not, in and of itself, sufficient to establish CR.[40]

A further distinction between a CR analysis and the development of a FMV opinion is that the CR thresholds include consideration of the "…value to the entity paying for…"[41] the enterprise, assets, or services being transacted, while the FMV opinion requires that a *universe of hypothetical buyers, sellers, owners,* and *investors* be considered. For example, consider the acquisition of ten linear accelerators by a purchaser. If the purchaser has need of only one linear accelerator, the purchase of ten linear accelerators even at a FMV price would not meet the *necessity of the assets purchased* threshold of the CR analysis.[42]

To assess the *commercial reasonableness* of a proposed transaction, the valuation analyst should begin with certain prerequisite elements, including:

(1) Whether each element of a prospective transaction does not exceed *Fair Market Value*; and
(2) That the prospective transaction is a sensible, prudent business arrangement even in the absence of referrals.[43]

Based on pronouncements of the Stark Law, Congress has explicitly stated that the requirement that the transaction be a sensible, prudent business arrangement in the absence of referrals applies to several elements of physician-hospital transaction, including the following:

(1) "Rental of office space;
(2) Rental of equipment;
(3) Bona fide employment relationships;
(4) Personal service arrangements;
(5) Physician incentive plans;
(6) Physician recruitment;
(7) Isolated transactions, such as a one-time sale of property; and
(8) Certain group practice arrangements."[44]

40 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Hoboken, NJ: John Wiley & Sons, 2014, p. 940.
41 "Medicare and State Health Care Programs: Fraud and Abuse: Clarifications of the Initial OIG Safe Harbor Provisions and Establishment of Additional Safe Harbor Provisions Under the Anti-Kickback Statue" Federal Register Vol. 64, No. 223 (11/19/99), p. 63526.
42 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Hoboken, NJ: John Wiley & Sons, 2014, p. 940.
43 "Medicare Program: Physicians' Referrals to Healthcare Entities with which they have Financial Relationships (Phase II)" Federal Register Vol. 63, No. 59 (March 26, 2004), p. 16093.

The Office of Inspector General (OIG), in its interpretation of whether a prospective transaction considered the volume or value of referrals, looks for any financial arrangement which may induce a physician to change their referral pattern, such as:

(1) "…[A]rrangements [to] promote overutilization and…unnecessarily lengthy stays;"[45] and,
(2) "…[P]ayments to induce physicians…to reduce or limit services to…patients."[46]

Therefore, transactions that take into consideration "the value or volume of referrals" will not meet the regulatory threshold of a CR analysis.[47]

After ensuring that each element of the prospective transaction does not exceed Fair Market Value and that the transaction would be a sensible, prudent business arrangement even in the absence of referrals, further analysis of both the qualitative and quantitative aspects of the proposed transaction is warranted to determine its commercial reasonableness.

Qualitative Analysis

The steps involved in the qualitative assessment of CR focus on determining the acquirer's business purpose(s) and how the anticipated transaction assists in meeting that purpose. The specific qualitative thresholds are as follows:

(1) Is the integration transaction necessary to accomplish the business purpose of the client;
(2) Does the nature and scope of the underlying elements of the integration transaction meet the business needs of the client;
(3) Does the enterprise and organizational elements of the integration transaction make business sense to the client;
(4) Does the quality, comparability, and availability of the underlying elements of the integration transaction make business sense for the client;
(5) Are there sufficient ongoing assessments, management controls, and other compliance measures in place related to the underlying elements of the integration transaction; and
(6) Is the transaction otherwise legally permissible?[48]

Business Purpose

In determining whether the transaction fulfills a "business purpose"[49] for the acquirer, the OIG and the IRS have provided definitional guidance, as follows:

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44 "Limitation on Certain Physician Referrals" 42 U.S.C. § 1395nn(e) (2012).
45 "OIG Advisory Opinion No. 03-8" Office of Inspector General, Advisory Opinion, April 3, 2003, https://oig.hhs.gov/fraud/docs/advisoryopinions/2003/ao0308.pdf (Accessed 3/19/15.
46 "Publication of the OIG Special Advisory Bulletin on Gainsharing Arrangements and CMPs for Hospital Payments to Physicians to Reduce or Limit Services to Beneficiaries" Federal Register Vol. 64, No. 134, (7/14/99) p. 37985.
47 "Limitation on Certain Physician Referrals" 42 U.S.C. § 1395nn(e) (2012).
48 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Hoboken, NJ: John Wiley & Sons, 2014, p. 941.
49 "Limitation on Certain Physician Referrals" 42 U.S.C. § 1395nn(e) (2012); "Medicare and State Health Care Programs: Fraud and Abuse: Clarification of the Initial OIG Safe Harbor Provisions and Establishment of Additional Safe Harbor Provisions under the Anti-Kickback Statute" Federal Register Vol. 64, No. 223 (11/19/99) p. 63525.

(1) HHS commentary on the AKS regulations considers transactions to have a business purpose if they can be "reasonably calculated to further the business of the lessee or acquirer;"[50] and
(2) The IRS defines business activities as those "carried on for the production of income from the sale of goods or the performance of services."[51]

One element that may indicate a sensible, prudent business arrangement is the anticipated economic benefit to be derived from the financial profitability resulting from the transaction. It should be noted that economic benefit can be derived from both monetary and non-monetary sources; however, the ultimate source of value is the expected utility to be derived from the ownership of a property interest. Financial remuneration (i.e., cash), in fact, is an intermediary economic benefit whose value emanates from its exchange for an asset which directly provides utility. Utility from a transaction may arise from economic benefits other than short-term profitability, including:

(1) Expansion into new geographic areas;[52]
(2) Expansion into new business lines;[53]
(3) Augmenting existing service lines;[54]
(4) Diversification benefits;[55]
(5) Avoiding costs of establishing offices and facilities, management, and other resources in place;[56]
(6) Operating expense reductions;[57]
(7) Increased asset utilization;[58]
(8) Reduced cost of capital and greater access to capital;[59]
(9) Horizontal integration;[60]
(10) Vertical integration;[61]
(11) Management and care protocols;[62]
(12) Increased access to technology and innovation;[63]
(13) Improved research and development;[64] and
(14) Tax motivation.[65]

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50 Ibid.
51 "Unrelated Business Activity" 26 U.S.C. § 513(c) (2012).
52 "Hospital Mergers: Why they Work, Why they Don't" By Larry Scanlan, Chicago, Il: Health Forum Inc., 2010, p. 27.
53 "Mergers, Acquisitions, and Corporate Restructurings" By Patrick Gaughan, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p. 14.
54 "Middle Market M&A: Handbook for Investment Banking and Business Consulting" By Kenneth Marks, Hoboken, NJ: John Wiley & Sons, Inc., 2012, p. 28.
55 "Mergers, Acquisitions, and Corporate Restructurings" By Patrick Gaughan, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p. 15.
56 "Mergers, Acquisitions, and Corporate Restructurings" By Patrick Gaughan, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p. 126; "Middle Market M&A: Handbook for Investment Banking and Business Consulting" By Kenneth Marks, Hoboken, NJ: John Wiley & Sons, Inc., 2012, p. 28.
57 "Hospital Mergers: Why they Work, Why they Don't" By Larry Scanlan, Chicago, Il: Health Forum Inc., 2010, p.27; "Physician Practice Mergers" By Reed Tinsley and Joe Havens, American Medical Association, 2011, p. 2.
58 "Joint ventures for Hospitals and Physicians: Legal Considerations" By Ross Stromberg and Carol Boman, Chicago, Il: American Hospital Publishing, 1986, p. 5.
59 "Mergers, Acquisitions, and Corporate Restructurings" By Patrick Gaughan, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p. 135; "Physician Practice Mergers" By Reed Tinsley and Joe Havens, American Medical Association, 2011 p. 3.
60 "Mergers, Acquisitions, and Corporate Restructurings" By Patrick Gaughan, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p. 156.
61 "Mergers, Acquisitions, and Corporate Restructurings" By Patrick Gaughan, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p. 156.
62 "Physician Practice Mergers" By Reed Tinsley and Joe Havens, American Medical Association, 2011 p. 3.
63 "Middle Market M&A: Handbook for Investment Banking and Business Consulting" By Kenneth Marks, Hoboken, NJ: John Wiley & Sons, Inc., 2012, p. 28.
64 "Mergers, Acquisitions, and Corporate Restructurings" By Patrick Gaughan, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p. 175.
65 "Tax Attributes as Determinants of Shareholder Gains in Corporate Acquisitions" By Carla Hayn, Journal of Financial Economics, Vol. 23, No. 1, (June 1989), p. 148.

While these synergistic gains to a specific owner or investor would not likely be considered when performing a Fair Market Value analysis, they may be a significant factor in establishing that a transaction is commercially reasonable.[66]

Tax exempt 501(c)(3) organizations, which must be "organized and operated exclusively for an exempt purpose"[67] such as "charitable, religious, educational, scientific,… [or] public safety"[68] may incur financial losses. As set forth in Revenue Ruling 69-545, as it relates to healthcare enterprises, "In the general law of charity, the promotion of health is considered to be a charitable purpose.… A nonprofit organization whose purpose and activity are providing hospital care is promoting health and may, therefore, qualify as organized and operated in furtherance of a charitable purpose."[69] This *charitable mission* provides the basis for the healthcare enterprise's tax-exempt status, whereby, in lieu of a cash return benefit, the tax-exempt organization will presumably, in the service of their stated charitable mission, generate a social benefit for the community it serves. This social benefit may take the form of indigent care provided to the community in which the non-profit organization operates, which may provide improved public health, a benefit that accrues to all members of the community.[70] A further example of social benefit is the evolving mission and objective of tax-exempt hospitals, which have grown to include their role as organizers and integrators of care in a community, whereby they provide a continuum of care across a population, which may not necessarily be profitable, but are nonetheless necessary for the health of the population in that community.

Necessity of the Subject Property Interest

In assessing the necessity of the subject property interest to the purchaser, the OIG suggests that an analysis be performed as to whether "the items and services obtained… [are] necessary to achieve a legitimate business purpose of the [employer] (apart from obtaining referrals)."[71] In addition, guidance related to the CR threshold of necessity may be gleaned from IRS pronouncements and regulations used in determining whether an item is considered a "reasonable business expense." For example, the IRS requires a determination of whether the property interest is "necessary"[72] for the business purpose of the purchaser, i.e., "helpful and appropriate for [the] trade or business,"[73] in light of the "the volume of business handled;"[74] the number of "beds, admissions, or outpatient visits;"[75] "the complexities of [the] business;"[76] and/or the "size of the organization."[77]

66 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 965.
67 "Exemption Requirements—Section 501(c)(3) Organizations" Internal Revenue Service, 1/22/2014, http://www.irs.gov/Charities-%26-Non-Profits/Charitable-Organizations/Exemption-Requirements-Section-501(c)(3)-Organizations (Accessed 1/22/14).
68 "Exempt Purposes—Internal Revenue Code Section 501(c)(3)" Internal Revenue Service, 10/30/2013, http://www.irs.gov/Charities-%26-Non-Profits/Charitable-Organizations/Exempt-Purposes-Internal-Revenue-Code-Section-501(c)(3) (Accessed 1/22/14).
69 "IRS Revenue Ruling 69-545, 1969-2 C.B. 117" Internal Revenue Service, http://www.irs.gov/pub/irs-tege/rr69-545.pdf (Accessed 1/22/14).
70 Note that, some for-profit healthcare organizations do provide indigent care but their incentive to provide this care may be different from that of charitable, non-profit organizations, which by mandate must provide the care.
71 "OIG Supplemental Compliance Program Guidance for Hospitals" Federal Register Vol. 70, No. 19 (1/31/05) p. 4866.
72 "Trade or Business Expenses for Itemized Deductions for Individuals and Corporations for the Computation of Taxable Income for normal Taxes and Surtaxes" 26 U.S.C. § 162(a) (2012).
73 "Deducting Business Expenses" Internal Revenue Service, 1/2/2013, http://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/Deducting-Business-Expenses (Accessed 2/26/13).
74 "IRS Publication 535: Business Expenses" Internal Revenue Service, March 10, 2014, p.7.
75 "IRS Exempt Organizations Hospital Compliance Project: Final Report" Internal Revenue Service, p. 136.
76 "IRS Publication 535: Business Expenses" Internal Revenue Service, March 10, 2014, p.7.
77 "Physician Compensation Arrangements: Management and Legal Trends" By Daniel Zismer, Gaithersburg, MD: Aspen Publishers, 1999, p. 204.

Further guidance from the HHS commentary on the AKS suggests that analysts should determine how the "space, equipment, or services" meet the "lessee or purchaser needs, intents to utilize, and…commercially reasonable business objectives."[78] To determine the necessity of the subject property interest to the acquirer, a valuation analyst may consider the following:

(1) The prevalence and incidence of disease;
(2) The relative frequency of demographic and behavioral risk factors associated with diseases in the market service area, associated state(s), and the United States;
(3) The population trends of the market service area, associated state(s), and the United States;
(4) Current treatment options for the injury, ailment, or disease treated by the subject provider(s);
(5) The supply of physicians and other providers in the market service area, associated state(s), and the United States;
(6) The level of competition related to the subject property interest within the market service area;
(7) The economic costs related to disease in the market service area, associated state(s), and the United States; and
(8) The payor environment in the market service area, associated states(s), and the United States.

Nature & Scope of Property Interest

Additionally, a CR opinion should include a determination as to whether the nature and scope of the property interest meet the business needs of the acquirer. Guidance regarding the nature and scope threshold of the CR analysis may, similarly to the necessity threshold, be gleaned from IRS pronouncements and regulations used to determine whether an item is a reasonable business expense. For example, the IRS has advised that the nature and scope of services provided should be analyzed to determine as to whether their cost is:

(1) A "[cost] of carrying on a trade or business;"[79]
(2) Undertaken "for the production of income from the sale of goods or the performance of services;"[80]
(3) "[P]aid or incurred during the taxable year;"[81]
(4) "[R]easonable in terms of the responsibilities and activities…assumed under the contract;"[82] and
(5) "[R]easonable in relation to the total services [received]."[83]

78 "Medicare and State Health Care Programs: Fraud and Abuse: Clarifications of the Initial OIG Safe Harbor Provisions and Establishment of Additional Safe Harbor Provisions Under the Anti-Kickback Statue" Federal Register Vol. 64, No. 223(11/19/99) p. 63525.
79 "Trade or Business Expenses for Itemized Deductions for Individuals and Corporations for the Computation of Taxable Income for normal Taxes and Surtaxes" 26 U.S.C. § 162(a) (2012).
80 "Unrelated Trade or Business" in "Taxation of Business Income of Certain Exempt Organizations" 26 U.S.C. § 513(c) (2012).
81 "Trade or Business Expenses for Itemized Deductions for Individuals and Corporations for the Computation of Taxable Income for normal Taxes and Surtaxes" 26 U.S.C. § 162(a) (2012).
82 "IRS Revenue Ruling 69-383, 1969-2 CB 113" Internal Revenue Service, 1969. http://www.irs.gov/pub/irs-tege/rr69-383.pdf (Accessed 1/23/14).
83 "Health Care Provider Reference Guide" By Janet Gitterman and Marvin Friedlander, Internal Revenue Service, 2004, p. 19.

Enterprise and Organizational Elements

Next, a CR opinion should include an analysis of the anticipated transaction in light of various enterprise and organizational elements of the acquirer. The IRS pronouncements regarding reasonable compensation for tax purposes indicate that a determination should be made as to whether the consideration paid for the property interest is "*a sensible, prudent business agreement*"[84] for the acquirer. This determination is made within the context of:

(1) "[T]he pay compared with the gross and net incomes of the business;"[85]
(2) The "business policy regarding pay for all employees;"[86]
(3) "[T]he cost of living in the locality,"[87] based on an analysis of the "national and local economic conditions"[88] including whether the acquirer is located in a "rural, urban, [or] suburban"[89] area; and
(4) The structure, size, and location of the purchaser.[90]

The anticipated transaction may require healthcare entities purchasing physician services to compensate those physicians at a higher rate per unit of productivity (e.g., per wRVU) than the physician historically earned in their private practice for providing the same services. Note that a physician's compensation per unit of productivity in private practice may be lower than market survey data derived measures of Fair Market Value for several reasons, including:

(1) According to the theory of utility maximization, physicians would only pursue compensation levels above the amount they were able to generate from their own practice in maximizing their individual compensation, wealth, or other measure of utility. Further, those physicians receiving compensation for their services above the market survey derived measures of Fair Market Value would not be acting in their own rational economic self-interest by pursuing a transaction where they would be paid less for their services than what they are able to generate from their private practice;
(2) Under the economic principle of substitution, a potential purchaser of healthcare services would be willing to pay up to the price of a desirable substitute, and normative industry benchmark survey data can be utilized to determine the most probable price that the purchaser would likely expend for substitute services;
(3) The historical level of return on the subject services is strictly reflective of the outcome of the economic factors impacting the operational performance and financial condition of the use of that property interest in the physician's prior practice, which may not be reflective of the market as a whole;
(4) Purchasers or lessees of physician services, bound by Fair Market Value as a ceiling price, act to maximize their profit by acquiring at the lowest total cost, while sellers,

84 "Medicare and Medicaid Programs; Physicians' Referrals to Health Care Entities with Which they Have Financial Relationships" Federal Register Vol. 63 No. 6 (1/9/98) p. 1700.
85 "IRS Publication 535: Business Expenses" Internal Revenue Service, March 10, 2014, p.7.
86 Ibid.
87 Ibid.
88 "Physician Compensation Arrangements: Management and Legal Trends" By Daniel Zismer, Gaithersburg, MD: Aspen Publishers, 1999, p. 204.
89 "IRS Exempt Organizations Hospital Compliance Project: Final Report" Internal Revenue Service, 11/7/08, http://www.irs.gov/pub/irs-tege/frepthospproj.pdf (Accessed 1/23/14) p. 136.
90 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 955.

bound by the floor set at the level of income they generated for their services from their prior physician practice, act to maximize their profit by selling the subject property interest at the highest total price. The point where both parties will choose to transact would fall between the ceiling set forth by the regulatory restriction of Fair Market Value and the floor set forth by the historical earnings of the physician from their prior practice. The degree by which the final negotiated price is closer to the point of utility maximization for the buyer (i.e., the lowest total cost) or to that of the seller (i.e., the highest total price) is determined, in great part, by the trade-off between leverage and negotiating skill between the two parties;

(5) In addition to maximizing their financial benefits, physicians may derive utility from intrinsic sources, such as the personal autonomy afforded to a physician owner of a practice, in contrast to an employed physician; and

(6) The equivalency of knowledge between buyers and sellers may not be fully reflected in the bargain, as physicians, more typically highly trained in clinical subjects than in financial economics, may utilize and rely more heavily on their past personal experiences, which are not necessarily reflective of future economic market realities, in decision making.[91]

As discussed above, tax-exempt organizations must be organized and operated for an exempt purpose and, therefore, a CR analysis should consider whether the proposed transaction meets the exempt organization's charitable mission.

Quality, Comparability, & Availability

Another qualitative element of a CR analysis is whether the quality, comparability, and availability of the services, assets, and enterprises included in the anticipated transaction fit into the business purpose of the acquirer. The IRS pronouncements on reasonable compensation for tax purposes suggest that a CR analysis consider "the ability and achievements of the individual employee performing the service,"[92] including "education;"[93] "specialized training and experience of the individual;'[94] "the history of pay for [the] employee;"[95] and "the availability of similar services in the geographic area."[96] Additionally, the OIG advises that a CR analysis consider "the skill level and experience reasonably necessary to perform the contracted services,"[97] especially if "the services [could be obtained] from a non-referral source at a cheaper rate or under more favorable terms."[98] Finally, the Code of Federal Regulations specifies that when conducting an assessment as to the CR of a prospective transaction, valuation analysts should consider "the type, expected life, condition…and market conditions in the area…[for]

91 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, pp. 883-887.

92 "IRS Publication 535: Business Expenses" Internal Revenue Service, March 10, 2014, p.7.

93 "IRS Exempt Organizations Hospital Compliance Project: Final Report" Internal Revenue Service, 11/7/08, http://www.irs.gov/pub/irs-tege/frepthospproj.pdf (Accessed 1/23/14) p. 136.

94 "Physician Compensation Arrangements: Management and Legal Trends" By Daniel Zismer, Gaithersburg, MD: Aspen Publishers, 1999, p. 204.

95 "IRS Publication 535: Business Expenses" Internal Revenue Service, March 10, 2014, p.7. Note that the commentary below offers justification for paying physicians at higher rates per unit of productivity than they historically earned in private practice.

96 "Failure by Certain Charitable Organizations to Meet Certain Qualification Requirements: Taxes on Excess Benefits" Federal Register Vol. 63, No. 149 (8/4/1998) p. 41493.

97 "OIG Supplemental Compliance Program Guidance for Hospitals" Federal Register Vol. 70, No. 19 (1/31/05) p. 4867.

98 Ibid.

facilities or equipment,"[99] as well as whether "adequate alternative facilities or equipment that would serve the purpose are not or were not available at lower costs."[100]

Other elements of the transaction that may not fit neatly into the previously discussed categories include:

(1) The "quality of management and interdisciplinary coordination."[101] The government's expert witness report in the *U.S. v. SCCI Hospital Houston Central* case suggested that healthcare entities should conduct "a regular assessment of the actual duties performed by the [employee]...[and] it should be clear how effective the [employee] is doing his assigned job and if there is a bona fide need for continuing the services."[102]
(2) In the *U.S. v. Carlisle HMA, Inc.* case, the Court ruled that healthcare entities need to determine whether the current "consideration given and received [is paid] under materially different circumstances"[103] than when the contract was entered.
(3) The OIG advises consultants to review transactions to determine if:
    (a) "the arrangements flow from an open, competitive [request for proposal] process;"[104]
    (b) "the risk that the arrangements will result in inappropriate utilization;"[105]
    (c) "the arrangements are…likely to have a negative effect on patient care;"[106] and
    (d) "the arrangements…have an adverse impact on competition."[107]
(4) A determination as to whether compensation for professional physician services does not exceed the level of collections for those services. In its appellate brief for the U.S. ex rel. Drakeford v. Tuomey case, the Department of Justice (DOJ) stated:

> "Obert-Hong dealt with physician compensation arrangements where – unlike the Tuomey arrangements – the physicians did not earn more than their personal collections, and where there was no other basis to presume that the physicians were being paid for actual or anticipated referrals." [108]

Within the aforementioned statement from the *Tuomey* case, the DOJ implied that physician compensation arrangements where physicians are compensated for their professional services in excess of the collections generated by those services, might be considered by the government to be payment for actual or anticipated referrals, which would violate both the standard of Fair Market Value and the threshold of CR. Further, the government's expert in the Tuomey case concluded that the physician contracts in question were "commercially unreasonable" since: "… among other things, [the physician contracts] did not protect the financial interest of the hospital,"[109] finding specifically that:

99 "Introduction to Capital-Related Costs" 42 CFR § 413.130(b)(2)(i) (2012).
100 Ibid.
101 "United States ex rel. Kaczmarczyk, et. al. v. SCCI Hospital Houston Central, et. al" No. H-99-1031 (S.D.T.X. 2005) Fair Market Valuation of Medical Director of Program Director Services, p. 4.
102 Ibid.
103 "U.S. ex rel. Ted Kosenske, MD, v Carlisle HMA, Inc., and Health Managements Associates, Inc.," 554 F.3d 88, 97 (3rd Cir. 2009).
104 "OIG Advisory Opinion Number 12-09" Office of Inspector General, Advisory Opinion, July 23,2012, https://oig.hhs.gov/fraud/docs/advisoryopinions/2012/AdvOpn12-09.pdf (Accessed 3/19/15) p. 6-7.
105 Ibid.
106 Ibid.
107 Ibid.
108 "U.S. ex rel. Drakeford v. Tuomey" No. 10-1819 (4th Cir. 2012) Brief for Appellee, p. 36-37.
109 Ibid, p. 17.

(1) "The term of the physician employment agreements is ten years without provisions to change the physicians' compensation methodology;
(2) The physicians' net outpatient collections are not required to exceed their practice overhead and their base salary before bonuses were earned;
(3) Combined with the cost of billing fees, each physician's compensation and benefits paid materially exceeded his or her Tuomey outpatient collections; and
(4) Since their inception, Tuomey's physician practices have incurred material financial losses."[110]

Not Otherwise Legally Permissible

Even in the event that a transaction meets all of the foregoing qualitative elements, the transaction may not be considered commercially reasonable if it is not otherwise legally permissible. For example, factors to consider when assessing the legal permissibility of the anticipated transaction may be found in antitrust pronouncements by the Federal Trade Commission (FTC), which advise that valuation analysts consider whether:

(1) The anticipated transaction "is likely to produce significant efficiencies;"[111]
(2) "These efficiencies include the provision of services at a lower cost or the provision of services that would not have been provided absent…"[112] the anticipated transaction;
(3) The efficiencies achieved as a result of the anticipated transaction "will benefit consumers;"[113]
(4) The anticipated transaction will help "monitor and control costs…while assuring quality of care;"[114]
(5) The anticipated transaction "appears likely, on [the] balance, to be procompetitive or competitively neutral;"[115] and
(6) The anticipated transaction "would not increase the likelihood of the exercise of market power…because of the existence of the post-[transaction] of strong competitors."[116]

Other legal edicts that significantly influence healthcare transactions include:

(1) The Stark Law;[117]
(2) The Anti-Kickback Statute; [118] and
(3) The Internal Revenue Code.[119]

110 "U.S. ex rel. Drakeford v. Tuomey" No. 3:05-cv-02858-MBS (D.C. S.C. 2009) Myers and Stauffer Fair Market Value, Commercial Reasonableness Assessment, p. 12.
111 "Statements of Antitrust Enforcement Policy in Health Care" Department of Justice and Federal Trade Commission, August 1996, p. 4.
112 Ibid, p. 13.
113 Ibid, p. 13.
114 "Norman PHO Advisory Opinion" Federal Trade Commission, 2/13/13, http://www.ftc.gov/os/2013/02/130213normanphoadvltr.pdf (Accessed 4/1/13) p. 15.
115 Ibid, p. 18.
116 "Statements of Antitrust Enforcement Policy in Health Care" Department of Justice and Federal Trade Commission, August 1996, p. 11.
117 "Limitation on Certain Physician Referrals" 42 U.S.C. § 1395nn(a)(1)(A) (2012); "Health Care Fraud and Abuse: Practical Perspectives" Edited by Linda A. Baumann, Washington, DC: American Bar Association, 2002, p. 106; "Exceptions to the Referral Prohibition Related to Compensation Arrangements" 42 C.F.R. § 411.357 (2010); "Limitation on Certain Physician Referrals" 42 U.S.C. § 1395nn(a)-(e) (2012).
118 "Criminal penalties for acts involving Federal Health Care Programs" 42 U.S.C. § 1320a-7b (2012); "Limitations on Certain Physician Referrals" 42 U.S.C. § 1395nn (2012); "Exceptions" 42 C.F.R. § 1001.952(d) (2015); "General Exceptions to the referral prohibition related to both ownership/investment and compensation" 42 C.F.R. § 411.355(e) (2010); "Exceptions to the Referral Prohibition Related to Compensation Arrangements" 42 C.F.R. § 411.357 (2010).
119 "Definition of Excess Benefit Transaction" 26 C.F.R. § 53.4958-4(a)(1) (2002); "Rebuttable Presumption that a Transaction is not an Excess Benefit Transaction" 26 C.F.R. § 53.4958-6 (2002).

Of note is that, while valuation analysts must be versed in the rules and regulations surrounding the industry in which they provide services, typically, they do not offer or provide legal opinions. Thus, many CR opinions include a provision that states legal counsel has reviewed the arrangement and considers the proposed transaction to be legally permissible.

Standing alone, a transaction that overcomes the hurdles associated with the qualitative analysis is not yet deemed to be commercially reasonable; the analyst must then perform a quantitative analysis as part of its determination of CR.

Quantitative Analysis

Rendering a CR opinion requires that a specific set of core competencies be mastered by the valuation analyst apart from, but related to, the more traditional knowledge base, skill set, and experience required in rendering Fair Market Value (FMV) opinions related to the appraisal of the enterprises, assets, and/or services being transacted.[120] For example, when opining as to the FMV of an individual discrete subject property interest, a valuation analyst may use an income approach, which generally involves the following steps:

(1) Projecting the future net economic benefit accruing to the owner of the subject property interest;
(2) Determining the risk adjusted required rate of return associated with the projected future net economic benefit arising from ownership or control of the subject property interest;
(3) Discounting the projected future net economic benefit related to the subject property interest back to the valuation date; and
(4) Summing all discounted future net economic benefit related to the subject property interest to determine a value as of the valuation date. [121]

The post-transaction financial feasibility analysis used in assessing the quantitative factors of an anticipated transaction is similar to the income approach in that it considers projected future net economic benefit streams, and an assessment of the risk related to the probability of realizing those benefits streams. However, a CR analysis differs from a FMV opinion in that it considers:

(1) "All consideration to be paid by purchasers and lessees to sellers and lessors,"[122] in the aggregate, when projecting future net economic benefit, not just the net economic benefits arising from the individual discrete subject property interests comprising the anticipated transaction;
(2) The aggregate projected net economic benefits of ownership or control accruing to a particular buyer, which may include any "unique synergies the … particular buyer would realize as a result of acquiring the asset,"[123] not the aggregate projected net economic benefits accruing to the universe of typical buyers, sellers, owners, and investors; and

120 Ibid.
121 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies", By Shannon Pratt and Alina Niculita, 5th Edition, McGraw Hill, 2008, p. 174-182.
122 "Exceptions" 42 C.F.R. §1001.952 (2012); "Exceptions to the referral prohibition related to compensation arrangements" 42 C.F.R. §411.357(d)(1)(iii) (2012); "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 963.
123 "BV201: Introduction to Business Valuation" American Society of Appraisers, 2012, Ch. 2, p. 15-16; "Medicare and State Health Care Programs: Fraud and Abuse; Clarification of the Initial OIG Safe Harbor Provisions and Establishment of Additional Safe Harbor Provisions under the Anti-Kickback Statute" Federal Register Vol. 64, No. 223 (11/19/99) p. 63526.

(3) An economic cost/benefit analysis (e.g., payback period, net present value, and internal rate of return) to determine whether the anticipated transaction makes "commercial sense" for a particular buyer, not just a single estimate or range of monetary values for the universe of buyers, sellers, owners, and investors.[124]

The distinctions between a CR analysis and a FMV opinion discussed above may lead to different underlying assumptions being utilized in a CR analysis, including the following:

(1) Projecting future net economic benefits inclusive of the factors available to a particular buyer that may not be available under the FMV assumption of a universe of buyers, sellers, owners, and investors, e.g.:
    (a) Revenue synergies, e.g., increases in reimbursement yield which may result from a hospital converting a free-standing physician practice, which bills Ancillary Service and Technical Component (ASTC) services to Medicare under the Medicare Physician Fee Schedule (MPFS) on a non-facility basis using Current Procedural Terminology (CPT) codes, to a Hospital Outpatient Department (HOPD), which bills ASTC services to Medicare under the HOPD Prospective Payment System (PPS) using ambulatory payment classification (APC) codes;
    (b) Operating expense synergies, e.g., the historical operating expense burdens associated with the target entity's billing staff may be reduced due to the redundancy and reduplication in the services that an acquirer may already provide; and
    (c) Capital expenses synergies, e.g., the fixed costs per patient related to an electronic health records (EHR) system may be reduced due to an increase in EHR utilization resulting from the anticipated transaction; and
(2) Determining the risk adjusted required rate of return for a particular buyer inclusive of factors that may not be available under the FMV assumption of a universe of buyers, sellers, owners, and investors, such as:
    (a) Operating risk reductions, e.g., decreases in risk which may result from a diverse, multispecialty integrated health system acquiring a focused, single specialty free-standing physician practice;[125] and
    (b) Financial risk reductions, e.g., a large integrated health system may enjoy greater access to capital and, thus, a lower cost of capital than a small, freestanding physician practice.[126]

It should be noted that a valuation analyst must take care to avoid double counting when considering the various net economic benefit synergies and risk synergies described above. For example, if a reduction in the target entity's billing staff is projected, then the valuator may wish to consider increasing the operating risk return to reflect the additional risk required to attain the projected billing staff levels.

124 "Medicare Program: Physicians' Referrals to Healthcare Entities with which They Have Financial Relationships (Phase II)" Federal Register Vol. 69, No. 59 (3/26/04), p. 16093.

125 In general, the greater the diversity of an asset (or portfolio of assets), the lower the risk. For example, see "Investments," By William Sharpe, 2nd Edition, Englewood Cliffs, NJ: Prentice-Hall, 1981, p. 119-131.

126 In general, large entities are less risky than smaller entities. For example, see "The Cross-Section of Expected Stock Returns," By Eugene Fama and Kenneth French, Journal of Finance, Vol. XLVII, No. 2, June 1992, p. 427-465.

When performing a cost/benefit analysis for a particular buyer, a valuation analyst may also wish to consider the value metrics, which result from the application of one or more of the following analytical methods, to serve as a basis for a CR opinion related to an anticipated transaction:

(1) Net present value (NPV) analysis, which examines the total expected risk-adjusted future net economic benefits (e.g., present value of the future net cash flows) arising from the total initial economic expense burdens (e.g., initial cash outlays);[127]
(2) Internal rate of return (IRR) analysis, which contrasts an organization's risk adjusted required rate of return (or hurdle rate) against the discount rate that, when applied to the expected future net economic benefits of the subject property interest, results in a *zero* net present value;[128]
(3) Average accounting return (AAR) analysis, which determines the average of the net income arising from the assets or services to be acquired in the anticipated transaction for each discrete accounting period, divided by the book value of those subject property interest(s) acquired for each of the corresponding accounting periods;[129]
(4) Discounted payback period analysis, which is similar to a payback period analysis, calculates the number of discrete periods "until the sum of the *discounted* cash flow is equal to the initial investment;"[130] and
(5) Payback period analysis, which calculates the number of discrete periods necessary for "the cumulative forecasted [undiscounted] cash flow [to] equal the initial investment."[131]

Each of the value metrics that results from the cost/benefit analyses described above should be considered within the context of the qualitative factors of the CR analysis.[132] This is especially true when the cost/benefit analysis reflects a financial loss, as a transaction may still be commercially reasonable after the non-monetary benefits that may arise from the anticipated transaction are taken into consideration. For example, the benefits produced by a transaction that result in an expansion into new geographic areas and/or new service lines, or an improvement in the access to technology and/or innovation, may provide substantial evidence of a prudent business decision, i.e., commercial reasonableness.[133] In approaching any of these quantitative techniques, analysts should note that tax-exempt not-for-profit healthcare organizations operate in service to their stated charitable mission and, in lieu of taxes, provide a social benefit, which also may serve as justification for a certain level of financial loss resulting from a cost/benefit analysis of an integration transaction in the aggregate (as previously discussed in the Qualitative section, above).

127 "Fundamentals of Corporate Finance," By Stephen Ross, et al., 2nd ed., Boston, MA: Irwin, 1993, p. 220.
128 "Principles of Corporate Finance," By Richard Brealey, et al., Ninth Edition, New York, NY: McGraw-Hill Irwin, 2008, p. 122.
129 "Fundamentals of Corporate Finance," By Stephen Ross, et al., 2nd ed., Boston, MA: Irwin, 1993, p. 231.
130 Ibid, p. 228.
131 "Principles of Corporate Finance," By Richard Brealey, et al., Ninth Edition, New York, NY: McGraw-Hill Irwin, 2008, p. 120.
132 For a detailed discussion on the qualitative factors of the CR analysis, see "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 940-963.
133 See further examples described in "Hospital Mergers: Why they Work, Why they Don't," By Larry Scanlan, Chicago, IL: Health Forum Inc., 2010, p. 27; "Middle Market M&A: Handbook for Investment Banking and Business Consulting," By Kenneth Marks, Hoboken, NJ: John Wiley & Sons, Inc., 2012, p. 28; "IRS Revenue Ruling 69-545, 1969-2 C.B. 117," Internal Revenue Service, http://www.irs.gov/pub/irs-tege/rr69-545.pdf (Accessed 1/22/14); "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, 2014, p. 940-963.

VALUATION APPROACHES, METHODS, AND TECHNIQUES

REVENUE RULING 59-60

Among the wide array of sources of guidance that a valuation analyst should be familiar with in order adequately conduct a credible business valuation, the pronouncements of the Internal Revenue Service (IRS) may be the most widely cited. The IRS provides insights regarding its positions on business valuation issues through various mediums including: Internal Revenue Code, the Treasury Regulations to the Code, Technical Advice Memoranda, Private Letter Rulings, and various Revenue Rulings.

Revenue Ruling 59-60 (RR 59-60) has been a significant topic of discussion in the valuation community because it provides basic guidance for the valuation of closely held common stocks. RR 59-60 provides a general outline and review to "the approach, methods, and factors to be considered in valuing shares of the capital stock of closely held corporations for estate tax and gift tax purposes."[134]

In the valuation of the stock of closely held corporations or corporate stock that lacks market quotations, all available financial data along with significant factors affecting the Fair Market Value should be considered. According to RR 59-60, the following fundamental factors, although not all-inclusive, should be considered in each business valuation:

(1) "The nature of the business and the history of the enterprise from its inception;
(2) The economic outlook in general and the condition and outlook of the specific industry in particular;
(3) The book value of the stock and the financial condition of the business;
(4) The earning capacity of the company;
(5) The dividend-paying capacity;
(6) Whether or not the enterprise has goodwill or other intangible value;
(7) Sales of the stock and the size of the block of stock to be valued; and
(8) The market price of stocks of corporations engaged in the same or a similar line of business having their stocks actively traded in a free and open market, either on an exchange or over-the-counter."[135]

The choice of valuation methodology depends primarily on the purpose of the valuation report and the specific characteristics of the professional practice. For example, the standard of value to be estimated in a divorce case is often Fair Market Value; however, the standard may be different from state to state, because some states set a standard of Fair Value that is either judicially or legislatively defined. This idea is demonstrated by the state of Michigan, which has

134 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies," By Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweishs, Fourth Edition, New York, NY: McGraw-Hill, 2000, p. 585.
135 "Revenue Ruling 59-60, 1959-1" Internal Revenue Service, Cumulative Bulletin, p.237; "Definition of Gross Estate" 26 U.S.C. § 2031 (2012); (Also Part II, Sections 811(k), 1005, Regulations 105, Section 81.10.)

developed a concept known as the "holder's interest theory of value." The value to the holder concept is most often associated, although not frequently articulated, with investment or intrinsic value. Application of this standard of value contemplates value to the holder (or particular buyer) rather than value to a potential hypothetical buyer, that is "*investment value* [is distinguished] from Fair Market Value in that it . . . provide[s] a going concern value to the current owner . . . [and thereby] identifies assets that have an . . . intrinsic worth to the owner, which may not be transferable to another individual"[136] [Emphasis added].

The three categories of major valuation approaches for the purpose of appraisal: income, cost, and market.[137]

Once the valuation analyst clearly understands the purpose of the appraisal assignment, has determined the standard of value and the premise of value, and has determined the availability and reliability of data, he or she must select one or more applicable methods. These methods can be classified by three major valuation approaches: (1) income, (2) cost, and (3) market.

INCOME APPROACHES

Income approach-based methods measure the present value of anticipated future economic benefits that will accrue to the owner of the subject entity. Economic benefit of ownership has several potential measures: cash flow, net income, net operating income, or dividend payouts. In addition to estimating the future economic benefits of ownership of the subject entity, an appropriate discount rate (as discussed below), risk-adjusted for the subject entity, by which the benefits are discounted, must also be developed.

Two income approach methods are discussed in the following sections: (1) the discounted cash flow method and (2) the single period capitalization method.

Discounted Cash Flow Method

The discounted cash flow method (DCF method) is a multi-period income approach-based method, which estimates the present value of expected future net economic benefit to various capital providers of the enterprise being appraised, with a residual or *"terminal"* value ascribed to all periods beyond the estimated projection.[138]

The net economic benefit typically utilized in a DCF method is *cash flow*. There are two distinct levels of cash flow for an enterprise: (1) debt-free cash flows, which accrue to both debt and equity holders and (2) net-of-debt cash flows, which accrue solely to equity holders. Debt-free cash flows are calculated as Earnings Before Interest and Taxes (EBIT) less taxes, which is also referred to as Net Operating Profit After Tax (NOPAT), plus non-cash operating expenses such as depreciation and amortization, less changes in working capital, as well as required capital

136 "Standards of Value: Theory and Applications" By Jay E. Fishman, Shannon P. Pratt, and William J. Morrison, Hoboken, NJ: John Wiley & Sons, Inc., 2007, p. 167, 181.
137 "Valuation Discounts for Lack of Marketability," by Robert James Cimasi, *Physician's News Digest*, Aug. 2007, www.physiciansnews.com /business/807 cimasi.html (accessed December 11, 2010).
138 "Financial Valuation: Application and Methods" By James R. Hitchner, Hoboken, NJ: John Wiley & Sons, Inc., 2011, p.143.

expenditures (both maintenance- and growth-related capital expenditures). The calculation of net-of-debt cash flows is similar to that of debt-free cash flows, except that for net-of-debt cash flows, after-tax interest expense is subtracted from NOAT before economic capital expense burdens (i.e., working capital and cap ex) are deducted, and changes in net-debt (i.e., debt issuances less debt repayments) are included in the cash flow build-up.

Once the appropriate level of net economic benefit has been determined, the present value of the future net economic benefits is calculated by applying an appropriate risk adjusted required rate of return, or discount rate. For debt-free cash flows, the appropriate discount rate is a weighted average cost of capital, which reflects the optimal capital structure of the enterprise (which can be an industry level, historical level, or some other amount, depending on the facts and circumstances of the valuation engagement), along with the cost of equity and the cost of debt. For net-of-debt cash flows, the appropriate discount rate is the cost of equity.[139] Regardless of the cash flow level being utilized as the net economic benefit, the projected amounts are then discounted over the selected years of the projection at the appropriate discount rate.

All cash flows occurring after the final year of the projection are accounted for in the terminal period by first projecting the final period net economic benefit one more period at an appropriate long term growth rate. This amount is then capitalized, which equates to dividing the final projected net economic benefit by a capitalization rate (i.e., the discount rate less the long term growth rate). The capitalized value is then discounted back to the present at the appropriate discount rate. The discounted terminal period value is then added together with the present value of the projection period net economic benefits to derive the value of the enterprise.

Because the discounted net cash flow method typically results in a Subchapter C corporation equivalent level of value due to both the tax structure typically used in projections, as well as the use of a build-up method to develop a discount rate derived from empirical market transactional data shares of publicly traded C corporations, an adjustment to reflect a pass-through entity, minority equity interest level of value may be appropriate.[140] An adjustment to reflect the additional incremental net economic benefits derived from an entity's pass-through status also may be applicable to the indicated results derived from other methods, including the guideline public company method and the direct market comparable transactions method, which are discussed further in subsequent sections.

Single Period Capitalization Method

This method, also known as the *capitalization of earnings method,* estimates the present value of the enterprise being appraised by capitalizing a single representative (normalized) year of net economic benefit, in contrast to the multiple period discounting associated with the DCF method.[141]

139 "PPC's Guide to Business Valuations" By Jay Fishman, et al., Vol. 1, Thomson Reuters/PPC, 2014, p. 5-67.
140 "The S Corporation Economic Adjustment Model" By Daniel R. Van Vleet, ASA, Business Valuation Review, September 2004, p. 167.
141 "ASA Business Valuation Standards" American Society of Appraisers, 2008, p. 26.

The three variables on which a capitalization method depends are: (1) projected base level net economic benefit, (2) *cost of capital*, and (3) expected long-term growth rate.[142] As such, it should be noted that inherent in the single period capitalization method is the expectation of stable, constant growth, and it is sensitive to unpredictable volatility or otherwise erratic changes in economic income. In cases in which the anticipated net economic benefits are expected to be unstable, the valuation analyst will most likely utilize the DCF method rather than the single period capitalization method. In contrast, the single period capitalization method is often useful for entities expecting a stable or relatively even growth in economic benefits.[143]

Valuation Adjustments for Risk

Both the income approach-based methods mentioned above, as well as most income approaches in general, are heavily reliant on selecting an appropriate risk adjusted required rate of return, or discount rate. There are a multitude of models for estimating discount rates, which are outside of the scope of this reading.[144] However, the selection of an appropriate risk adjustment to market derived required rates of return utilized in the development of selected discount rates, capitalization rates, market multiples, or a combination of these, requires a thorough understanding of several underlying investment concepts. At a minimum, when developing a discount or *capitalization rate* to be applied in income approach methods for professional practices, the following should be considered:

(1) Investors in professional practices have alternative investments available to them. Therefore, the investment justification for a given professional practice should be considered in comparison to rates of return available from a broad array of other types of investments;
(2) High risk factors are considered to have a greater than average chance of negatively affecting the enterprise's earning power, while low risk factors are considered less likely to reduce the enterprise's ability to generate profits and cash flow as a future benefit of ownership. Accordingly, elements that *increase risk decrease the value* of the enterprise. Conversely, elements that *decrease risk increase the value* of the enterprise;[145]
(3) Knowledgeable investors in a professional practice with an accompanying high degree of risk should require a greater return on investment to compensate for the greater risk; and
(4) There will be differences of opinion regarding how much risk is represented by any single characteristic of the professional practice, and the risk tolerance of each individual investor is, to a large extent, dependent upon the return on investment required to compensate for his or her perceived level of risk.

> Elements that increase risk decrease the value of the enterprise, and, conversely, elements that decrease risk increase the value of the enterprise.
>
> ***"The Options Industry Council, Accessed January 15, 2010.***

142 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 256.
143 Ibid, p. 244-245.
144 See for example, *Cost of Capital* by Shannon Pratt.
145 "Options Pricing," The Options Industry Council, www.optionseducation.org/basics/options_pricing.jsp (accessed January 15, 2010).

In addition to the informed consideration of the effect of what may be volatile market changes on the perception of risk (which may be ascertained through consideration of the four pillars construct) and resulting adjustment to the required rate of return for investment, the most probable income, earnings, or benefit stream that is forecasted to be available as a return to the subject enterprise's investors should also be considered. This analysis helps to determine appropriate adjustments to reported results derived from historical performance, often referred to as *normalization adjustments,* which are made to reflect the most probable level of net economic benefit to be generated by the subject enterprise as of the valuation date.[146] To arrive at an estimate of the normalized net economic benefit for the subject enterprise, the adjustments considered should include, but are not necessarily limited to:

(1) Actual or expected increase(s) or decrease(s) in fees and reimbursement for services by regulatory edict or competitive market pressures;
(2) Projected increase(s) or decrease(s) in operating expenses based on new operating parameters and market realities, e.g., provider taxes and disclosure requirements; and
(3) Expectations of the future stability and growth of the revenue streams and the sustainability of the subject enterprise's earnings within the context of an ever-changing industry and marketplace.

In the final analysis, the valuation analyst should make an assessment of a universe of typical buyers' existing *perceptions of the market* regarding the future performance of the subject enterprise, as well the market's assessment of risk related to an investment in such an enterprise. The valuation analyst can then, based on an informed, realistic, and unsparing consideration of these conditions, make an assessment of an appropriate risk-adjusted required rate of return on investment and the forecast of the most probable income, earnings, or benefit stream.

APPLICATION OF THE VALUE PYRAMID TO THE VALUATION OF A PROFESSIONAL PRACTICE ENTERPRISE

As referenced in Figure 4-2, several steps must be taken in order to determine the value of the various components of the value pyramid (that is, *I, R,* and *V*), described in *The Value Pyramid*.

The value represented by *I* is defined as the net economic benefit stream available to the investors in the subject practice (for example, pre-tax net income, after-tax net income, net cash flow, and so forth), which were further discussed above.

Developing a Forecast and Net Economic Benefit: Projection of Net Revenue

The projection of net revenue typically is based upon two significant variables: (1) changes in reimbursement yield, which reflect the expected change in revenue per unit of procedure volume,

146 "PPC's Guide to Business Valuations" By Jay Fishman, et al., Vol. 1, Thomson Reuters/PPC, 2014, p. 5-19.

and (2) changes in utilization demand and market share, which reflect the expected change in procedure volume.[147]

The projection of reimbursement yield (revenue per unit of procedure volume) should include, but should not be limited to, consideration of such aspects as:

(1) The practice's payor mix;
(2) The practice management's change in commercial reimbursement yield;
(3) Potential Congressional action regarding Medicare and Medicaid reimbursement; and
(4) Changes to the types of procedures eligible for payment as designated by CPT codes (for example, the addition of new codes or the subtraction or bundling of existing codes).

Projected changes in utilization demand and market share should include, but should not be limited to, consideration of such aspects as:

(1) The expected change in the service area's population;
(2) The expected change in the age demographics and social economic characteristics of the service area's population;
(3) The introduction and acceptance of new technologies;
(4) The entrance or exit of competitors;
(5) Changes to the types of procedures eligible for payment as they are defined by CPT codes;
(6) The practice management's expectation of change in volume; and
(7) The existing capacity of the practice's facilities.

Fluctuation in Reimbursement Yield: Sustainable Growth Rate (SGR)

As a factor with a direct effect on the projection of a practice's net revenue, it is important for a valuation analyst to consider the variables that determine annual reimbursement yield. Between 1998 and 2015, Medicare annual fee schedules were determined by a methodology known as the sustainable growth rate (SGR). This method, based on a forecast of inflation, Medicare enrollment, growth of the gross domestic product (GDP), and specified regulatory developments, sets a target level for healthcare expenditures under Medicare Part B. Payment schedules for the subsequent year were adjusted either up or down depending on what actual healthcare expenditures were, as compared to the target.

As discussed further in Chapter 1: *Historical Development* of *An Era of Reform—The Four Pillars*, since 2002, healthcare expenditures have consistently exceeded SGR target levels, resulting in increasingly larger cuts to the physician payment schedules in subsequent years. However, due to Congressional action, the proposed cuts to reimbursement were overridden each year. Had Congress failed to act in accordance with its historical precedents, the change in reimbursement yield could have had a significant negative impact on an enterprise's net revenue. However, on April 16, 2015, President Obama signed the *Medicare Access and CHIP Reauthorization Act of 2015* into law, repealing the SGR. This legislation is discussed further in Chapter 6: *Healthcare Reform* of *An Era of Reform—The Four Pillars*.

147 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 65.

Developing a Forecast and Net Economic Benefit: Projection of Expenses

Once the revenue has been projected, the economic expense burden utilized to generate that revenue must be projected. The first step for projecting expenses is to determine whether the expense is a fixed expense or a variable expense. A fixed expense is one that does not change from period to period, or changes very little (for example, rent). In contrast, a variable expense changes with the consumption of the good or service of interest (for example, utilities).[148] When projecting expenses, a valuation analyst also may consider a mix of both fixed and variable expenses.

Once expenses are determined to be fixed or variable, the valuation analyst may then determine which growth index to utilize. A fixed expense can be grown at an indexed rate (for example, a medical care inflation rate), although a variable expense can be grown based on several methods of allocation, for example, at the rate of growth of net revenue, at the rate of growth of procedure volume, or at an increase in square footage, and so forth. In addition, in those circumstances in which an expense may be considered a mix of both fixed and variable expenses, it can be grown at a hybrid rate of growth, including the fixed indexed rate and the variable rate, or an expense can be projected based on management's expectation.

Developing a Forecast and Net Economic Benefit: Projection of Net Cash Flow

The statement of net *cash flow* reports an enterprise's sources and uses of cash for a specific period of time.[149] A projected economic statement of net cash flows (represented by *I* in the value pyramid) for the professional practice may be derived from the practice's forecasted income statements.

As previously discussed above, the practice's NOPAT typically is converted to a debt-free level of cash flow by the following method:

(1) Adding noncash expenses, such as depreciation and amortization expense;
(2) Subtracting increases in working capital; and
(3) Subtracting projected capital expenditures during each respective projected period.

The resulting net cash flow on a debt-free (asset) basis reflects the measure of economic benefit to the owner of assets in the professional practice, which is utilized in the discounted net cash flow method. However, also as previously discussed above, if the valuation analyst is not proceeding with the analysis on a debt-free basis and is instead utilizing a *net of debt* technique in a subsequent step, debt must be considered in the cash flow build-up.

148 "Variable Costs" as defined in "Financial Accounting: An Introduction to Concepts, Methods, and Uses" By Clyde P. Stickney, et. al., Mason, OH: South-Western, Cengage Learning, 2010, p. 917.

149 "Financial Accounting: An Introduction to Concepts, Methods, and Uses" By Clyde P. Stickney, et. al., Mason, OH: South-Western, Cengage Learning, 2010, p. 18.

As discussed in the *Value In-Exchange* section above, in order to support a premise of value-in-use as a going concern requires a reasonable likelihood that the subject enterprise would generate, in the reasonably foreseeable future, sufficient net margin or cash flow distributable first to those physician producers of the practice revenue stream, second to support the non-physician compensation-related overhead, and third to provide a sufficient economic cash flow that supports the value of the investment represented by the tangible assets utilized to generate the revenue stream of the practice enterprise. Otherwise, the premise of *value in-exchange* must be adopted, wherein each distinct tangible and intangible asset is valued.

COST CAPITAL: DEVELOPING THE RISK-ADJUSTED REQUIRED RATE OF RETURN

In the discussion of the value pyramid,[150] having forecasted future net economic benefit to the owner, the next step in the valuation process is to apply a risk-adjusted required rate of return (that is, the *R* of the value pyramid), by which the net economic benefit stream is capitalized to economic value at a date certain, also known as the *valuation date*.

Comparative Financial Data and Benchmarking

Information used to compare the subject enterprise's financial statements with industry averages is available through a variety of industry sources. Some of the standard sources which cover all industry categories include: *RMA Annual Statement Studies*, published by the Risk Management Association; *Financial Studies of the Small Business*, published by Financial Research Associates; and *Statistics of Income: Partnership Source Book* and *Statistics of Income: Sole Proprietor Source Book*, both of which are available from the National Archives of the IRS. Other sources of this data include trade associations and various industry studies.

Benchmarking techniques are often used to compare financial data and determine the degree to which the enterprise of interest (for example, professional practice) varies from comparable healthcare industry (market) norms, providing an indication of the subject enterprise's internal performance and financial status among other metrics for the purpose of assessing risk related to the investment in the subject enterprise.[151]

Return on Investment—Cost of Equity

The cost of equity, at which the measured expected stream of economic benefit of ownership is discounted to present value, is selected by the valuation analyst to represent the rate of return a typical investor in the professional practice would require in discounting the expected stream of the economic benefits of equity ownership of the subject professional practice, given the systematic risk of the market, as well as the unsystematic risk of investment in the subject professional practice. In contrast, the capitalization rate is the rate by which a single estimate of

150 See *The Value Pyramid* and *Application of the Value Pyramid to the Valuation of a Professional Practice Enterprise*.

151 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 119; See Chapter 2: *Benchmarking,* for further discussion of benchmarking techniques utilized in valuation and their purpose. Sources for financial and compensation benchmarking data are described further in *Sources of Benchmarking Data* of Chapter 2: *Benchmarking*..

benefit is divided to determine value. Inherent in the single period capitalization formula is the assumption of continuity of the benefit stream in perpetuity. Typically, the capitalization rate is calculated by deducting the projected annual long-term growth rate of the subject healthcare practice from the selected discount rate.

Cost of Equity
<less growth>
= Equity Capitalization (CAP) Rate

One method commonly utilized to derive the cost of equity for privately-held enterprises is the build-up method. This method calculates the risk adjusted required rate of return for an equity investment in the subject enterprise by building up the various elements of risk inherent in the investment represented by the subject equity interest. This includes consideration of:

(1) The risk-free rate;
(2) The investment alternative (or equity risk premium);
(3) An industry risk premium;
(4) A size premium (if applicable); and
(5) A company specific, or unsystematic risk premium.[152]

Risk-Free Rate

The starting point for developing an appropriate discount rate is the alternative investment opportunities in risk-free or relatively risk-free investments. The interest paid by U.S. government securities is often considered to be a close substitute or proxy for a risk-free rate (for example, a twenty-20-year treasury bond).

Investment Alternative (Equity Risk Premium)

This adjustment reflects the extra return, or premium, that is expected by the typical equity investor in large company stocks in excess of the return on a riskless asset. Duff & Phelps currently reports its studies and estimates of historical (since 1926) realized *equity risk premium (ERP)* associated with the risk of investment in common stock in its publication titled, *Valuation Handbook – Guide to Cost of Capital,* which has replaced the discontinued *Stocks, Bonds, Bills, and Inflation Yearbook, Valuation Edition* (SBBI) that was previously published by Ibbotson.

Various valuation publications have compared the expected growth in GDP, earnings, or dividends with realized returns reported by sources such as Duff & Phelps, noting that "investors could not have expected as large an ERP as the equity premiums actually realized."[153] Accordingly, it may be appropriate to adjust downward a historical realized ERP to estimate an expected ERP, based on the aforementioned studies and recent research.[154]

152 "PPC's Guide to Business Valuations" By Jay Fishman, et al., Vol. 1, Thomson Reuters/PPC, 2014, p. 5-55.
153 "Equity Risk Premium: What Valuation Consultants Need to Know About Recent Research: 2005 Update" By Roger J. Grabowski and David W. King, Valuation Strategies, Sep/Oct 2005, p. 14, 16, 18-20, 48.
154 Ibid.

Industry Risk Premium

This adjustment measures the risk of an equity investment in a particular industry against that of an equity interest in the market index as a whole by applying an industry risk premium to the indicated results of the first two steps of the *"build-up"* method, i.e., the risk free rate plus the equity risk premium. Duff & Phelps, in its publication titled, *Valuation Handbook – Guide to Cost of Capital,* has developed an industry risk premium methodology from tracking the returns and related betas, which are measurements of relative volatility, of companies in a number of industries. However, the latest Duff & Phelps publication did not report data for SIC 801 *Offices and Clinics of Doctors of Medicine.* In 2012, in its publication titled, *Stocks, Bonds, Bills and Inflation Yearbook, Valuation Edition,* Ibbotson reported the industry risk premium to be -0.62%.[155]

Size Risk Premium

The combination of the risk-free rate and the equity risk premium estimates the return required by investors in large company stocks. Duff & Phelps, in its publication titled, *Valuation Handbook – Guide to Cost of Capital,* has developed a size premium methodology that reflects the additional return expected by investors in smaller enterprises.[156]

Company-Specific Risk (CSR) Premium

This adjustment is somewhat more subjective in that it reflects the valuation analyst's informed assessment of the various risk factors that are inherent and specific to the subject professional practice. Additional risk factors specific to a subject healthcare practice include, but are not limited to, operational performance (as evidenced by benchmarking), market or competition, technological obsolescence, uncertainty related to reimbursement from government and managed care providers, provider and staff stability, access to capital, risk related to key persons or key suppliers, depth of management, and geographic distribution.

Research challenges related to determining the appropriate cost of equity include: (1) finding research to support the quantification of subject enterprise specific risk premiums; (2) obtaining size premium data for small companies; and (3) determining industry risk adjustments for certain professional practice industry subsectors.

Assessing Risk

When assessing the amount of risk associated with the given professional practice enterprise being valued (component *R* of the value pyramid), it is important for the valuation analyst to keep the following items in mind:

(1) Because increased uncertainty breeds an increased perception of risk, under which circumstances a higher rate of return is demanded by potential purchasers, even high quality, risk averse, stable growth, highly profitable, and eminently transferable professional practices may have the potential to be "tar-brushed" by the perception of

155 "2012 Valuation Yearbook: Market Results for Stocks Bonds, Bills, and Inflation, 1926-2011" Morningstar: Chicago, IL, 2012, p. 41.
156 "2014 Valuation Handbook: Guide to Cost of Capital" Duff & Phelps: Chicago, IL, 2014, p. 5-12—5-22.

overall market uncertainty, as well as risk related to the particular subject enterprise's industry sector;

(2) Other market motivating factors often drive transactional pricing multiples, for example, investors' fear of being shut out of their ability to legally maintain or sell their investment, represents an undue stimulus or special motivation and synergy that may drive the deal resulting in prices below or above value; and

(3) The selection of risk-adjusted rates to capitalize an earnings or benefit stream into value requires more than just a cursory analysis of underlying data related to market systematic risk, as a nonsystematic, subject enterprise risk adjustment also may be appropriate.

The valuation analyst should be aware that the assessment of risk by investors is related to both the actualities and, perhaps more substantially, the perceptions of the market related to external economic, demographic, and industry conditions, as well as to aspects of the specific subject professional practice and the prospective transaction.

Analysis of Risk

As discussed previously, it is important to first analyze and reach a supportable conclusion regarding the relationship between risk and return for a specific type of practice investment, which is characteristic of the specific dynamics of the market in which it operates at any point in time, before selecting a discount or capitalization rate.

It should be kept in mind that, although this estimate of investor-perceived risk is necessarily based, to a great degree, on the subjective judgment of the valuation analyst, objective methods and teachings are available, which should be employed (to the extent possible) to arrive at a valid and supportable discount or capitalization rate. The assessment of risk is inexorably related to and should be based upon an informed consideration of the most probable expectations and perceptions of a universe of typical buyers regarding the future performance of the subject enterprise, as well as material changes in substantive value drivers.

In the final analysis, the assessment of risk must be correlated carefully to an informed, realistic, and unsparing assessment of existing *"*buyer perceptions in the market*."*

Weighted Average Cost of Capital

The cost of equity typically is applied when determining the present value of future economic benefits in deriving the equity value of the enterprise being appraised or on a *net-of-debt* basis:

Equity = Assets – Liabilities

When applying an income approach method to value the assets of the enterprise, that is, on a *"*debt-free*"* basis, the valuation analyst would typically use a Weighted Average Cost of Capital (WACC) as the expected rate of return on the investment:

Assets = Equity + Liabilities

The WACC is a blend of the cost of an enterprise's various capital components, including the cost of debt capital and the cost of equity capital of the enterprise.

The WACC is calculated by the formula:

$$WACC = (k_e * W_e) + (k_d [1-t] * W_d)$$

Where:

k_e	=	Cost of Equity
W_e	=	Weight of Equity
k_d	=	Cost of Debt
t	=	Effective Tax Rate
W_d	=	Weight of Debt

MARKET APPROACHES

Market approach-based methods are rooted in the principle of substitution, which states that the value of a subject property is the cost of an equally desirable substitute or one of equal utility, and are premised on the foundation that actual transactions of similar entities provide guidance to value. The efficient market hypothesis posits that prices derived from well-functioning publicly traded markets are reflective of all pertinent information available to the participants in the market.[157] In the absence of properly functioning markets this becomes less true. For the market price to be indicative of the typical investor, the following attributes must be present:

(1) Market participants must be free from coercion or undue pressure to consummate a transaction;
(2) Markets must have sufficient liquidity to allow for the pricing process to unfold;
(3) A properly functioning market will allow sufficient time for buyers and sellers to locate each other and negotiate an acceptable price; and
(4) A reasonable equivalence of knowledge between the buyer and the seller regarding the asset and the nature of the prospective transaction.

To the extent that markets fail to achieve these criteria, the resulting market prices will be less informative and may fail to reflect the actual anticipated economic benefit accruing to the owners of the asset.

Market prices are empirical information, and as such, their validity and efficacy relies upon the manner and quality of the recording, collection and reporting of the data. This price system directs the allocation of scarce assets to those who can produce the greatest amount of expected benefit, as they would be willing to pay the greatest price for the asset. Market theory, therefore, suggests that prices derived from properly functioning markets are reflective of the anticipated economic benefit that would accrue to the typical owner of the asset. When there is a relatively efficient and unrestricted secondary market for comparable properties, and that market accurately represents the activities of a representative number of willing buyers and willing sellers, the

157 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 358.

market approach valuation methods utilizing data directly from the market may provide the best evidence as to the value of the subject property.

Healthcare professional practice owners are perhaps more comfortable with the market approach-based methods in concept because they may be more readily comprehended, being based on observable evidence of prior transactions of comparable entities in a manner somewhat similar to how homes are appraised. Although practice owners often prefer a simplistic and easily comprehended market approach-based method for appraising a healthcare professional practice, this desire for valuation convenience, in light of the paucity of reliable transactional data of homogenous, comparable enterprises, it is still often the case that (to use the old adage), "if wishes were horses, then beggars would ride!"

Although market approach-based methods are conceptually desirable, there may be significant impediments to their use in valuing closely-held enterprises. As stated by Dr. Shannon Pratt:

> "The opportunities to go awry in the implementation of the market approach are legion. Sometimes the toughest ones to spot are the errors of omission, such as failure to consider the full population of potentially useful guideline companies, failure to make certain adjustments, or failure to use all of the best data available to support certain adjustments, such as reasonable compensation, or a discount for lack of marketability. Some of the most common errors are: . . . failure to analyze and adjust guideline company data; . . . applying multiples to inconsistently defined data; . . . failure to account for excess or deficient cash; . . . using an 'asset plus' rule when a company's returns are not even adequate to support the assets employed; . . . not applying proper discounts and premiums or not adequately supporting the amounts of the discounts or premiums applied."[158]

In other words, the market-based approaches of valuation are contingent upon the homogeneity of comparable enterprises. The increasing degree of market diversity and complexity, paired with the lack of comparable and reliable data that may be attributed to potentially challenging methods of transaction price allocation may make it difficult to achieve the ideal level of homogeneity. As an example of this challenge, the Goodwill Registry, a widely known database published annually by the Health Care Group, Inc., is advertised as a source for transactional benchmarking data. It lists what it terms *"goodwill percent,"* which is designed to serve as an indicator of value for healthcare professional practices and is reported as "the sum total of practice intangibles under a term of convenience, 'goodwill.*"* More specifically, goodwill percent is based on *goodwill value*, defined as "the portion of the total value/sales price, including patient charts, leasehold interests, use of seller's name, going concern value, patient lists, credit records, restrictive covenants, consulting payments to seller, patient care contracts, etc."

The following criticisms are encountered when using data from the Goodwill Registry for market-based valuation methods:

158 "The Market Approach to Valuing Businesses" By Shannon Pratt, 2nd ed., Hoboken, NJ: John Wiley & Sons, Inc., p. 273.

(1) When maintaining the Goodwill Registry's definition of *goodwill value,* all intangible assets of a practice are defined as goodwill;[159]
(2) By asserting that all practice intangible assets should be considered goodwill, as well as in its derivation of goodwill, the Goodwill Registry does not address the very nature of how tangible and intangible assets coexist and relate to each other in the value of professional practices;[160]
(3) It does not offer an explanation regarding the source of the method of allocation of the reported practice transaction price between the subject enterprise's tangible and intangible assets and the subsequent reported amount of goodwill value; and
(4) It does not reveal or address whether the allocation of intangible asset value was based on the separate, discrete valuation of those respective asset classes, or whether it was calculated by the practice advisor or survey respondent merely by subtracting the tax basis depreciated book value of tangible assets that happen to appear on the practice's balance sheet (in contrast to their economic Fair Market Value) from the reported sale price and then simply assuming that the residual amount of the sale price after that subtraction equals the value of intangible assets.

Similar challenges in interpretation of data are inherent in other widely used transaction databases.

Further discussion of differing definitions of goodwill may be found in the *Conflicting Definitions of Intangible Assets Versus Goodwill* section below, and a discussion regarding the classification of tangible and intangible assets may be found in the *Classification and Valuation of Assets* section below, both in this Chapter. The following sections discuss several of the market-based methods utilized in valuation engagements and further illustrate the challenges associated with this genre of approaches.

Two commonly utilized market methods include: (1) the Merger and Acquisition Method and (2) the Guideline Public Company Method. Both of these similar methods are described below.

Merger and Acquisition Method

The Merger and Acquisition Method, also known as the *Guideline Transaction Method,* analyzes the terms (price, terms, interest, assets included, and so forth) of specific transactions involving the acquisition of substantial control positions (most often the entirety) of similar enterprises.[161] This method is founded on the conceptual basis of the economic principles of efficient markets and substitution. The merger and acquisition method may be applied when a relatively efficient and unrestricted secondary market for comparable properties exists and when that market accurately represents the activities of a representative number of willing buyers and willing sellers.

The principle of substitution holds that the cost of an equally desirable substitute, or one of equal utility, tends to set the ceiling of value, that is, it is the maximum that a knowledgeable buyer

159 See *Goodwill and Patient-Related Intangible Assets* for further discussion of generally accepted definitions of goodwill for valuation purposes.
160 As mentioned previously, this method apparently relies on subtracting the tax basis depreciated book value of tangible assets which happen to appear on the practice's balance sheet (in contrast to their economic fair market value) from the reported sale price, and then assuming that the residual amount of the sale price after that subtraction equals the value of intangible assets (which, as a term of convenience, it defines as "goodwill").
161 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 310.

would be willing to pay for a property or business.[162] However, the concept is burdened by the circumstance that, because no two companies are exactly the same, a valuation analyst must look for transactions of homogeneous companies similar to the subject enterprise to use as substitutes or *guidelines* to lead to an indication of value for the subject practice.[163]

An application of the merger and acquisition method is outlined in Exhibit 4-1.

Exhibit 4-1: The Merger and Acquisition Valuation Method

The following steps should be considered when using the merger and acquisition valuation method.
1. Select the appropriate look-back period prior to the valuation date from which to select transactions (that is, select a look-back period during which economic and industry conditions are similar to those at the valuation date).
2. Identify transactions in which the target company is similar to the subject enterprise (for example, same specialty, services, and so forth).
3. Obtain data regarding the transactions (for example, transaction consideration or price, transaction terms, target practice's financial information, number of physicians, services provided, geographic location, interest in the target company acquired, and so forth).
4. Select appropriate transactions to utilize in the methodology based upon similarity to subject practice and sufficiency of data and information related to the transaction.
5. Adjust transaction price for noncash terms of the deal. As mentioned previously in *The Standard of Value and the Universe of Typical Buyers*, implicit in the definition of Fair Market Value is "payment is made in cash or its equivalent." Therefore, if any of the transaction consideration in the guideline transactions was paid in company stock, management or consulting agreements, earn-outs, notes, or a combination of these, the transaction price may require an adjustment to reflect cash value.
6. Calculate appropriate valuation ratios. The valuation analyst must determine whether the ratios derive an equity level of value, for example, Market Value of Equity (Price)/Earnings Before Interest and Tax (EBIT) or Price/Earnings, or an invested capital or asset level of value (for example, Market Value of Invested Capital (MVIC)/Revenue or MVIC/Earnings Before Interest, Tax, Depreciation and Amortization (EBITDA).
7. Analyze the data for several statistical measures of central tendency, for example, mean, median, high, low, upper quartile, and lower quartile. The valuation analyst also may consider the relationship of the ratios to other characteristics of the target companies (for example, perform a regression analysis between the MVIC/Revenue ratio and the target companies' profitability).
8. Choose the appropriate ratio to apply to the subject enterprise's proper benefit stream (for example, multiply the subject practice's net revenue to the chosen MVIC/Revenue ratio).
9. Decide the appropriate weight of consideration to be given to each valuation technique if multiple techniques are utilized (for example, MVIC/Revenue and MVIC/EBITDA). The valuation analyst should consider the nature of the universe of typical purchasers of enterprises similar to the subject enterprise, i.e., are potential investors or hypothetical acquirers of the subject practice most likely be *horizontal consolidators,* which are companies whose motivations are to increase revenue within product lines offered at the time of comparison and would affect their own expense structure to the acquired revenue stream; or, are the potential investors or hypothetical acquirers *vertical integrators,* which are companies whose motivations are to add new product lines that are not offered at the time of comparison.
10. Adjust for any assets or liabilities included or excluded in the subject practice valuation but included or excluded in the guideline transactions.
11. Apply any premiums, discounts, or both, if appropriate, to reach the level of value as set forth in the valuation engagement.

162 Ibid, p. 358.
163 Homogeneous: the same in structure, quality, etc; similar; uniform.

The merger and acquisition method may be selected because, conceptually, an analysis of actual transactions of comparable healthcare practices and a comparison in the aggregate to the practice "makes good sense." However, the method may have drawbacks. Due to the developing and perceivably unreliable nature of reported comparable transactional data for healthcare practices, as well as the significant and substantive dissimilarity and individual uniqueness of healthcare practices (which tend to be unique enterprises lacking easily divisible, homogenous units for comparison), the abstraction of useful and valid data may be problematic.

Guideline Public Company Method

The Guideline Public Company Method is based upon the theory that an indication of value of the subject enterprise can be derived by analyzing historical transactional data to develop several transactional ratios of shares of common stock in publicly traded companies that provide services comparable to those provided by the subject enterprise.[164] As a result, the utility of this approach may be contingent upon the availability of a sufficient number of comparable publicly traded companies. This method assumes that pricing relationships, based on measurements of these selected transactional ratios of comparable publicly traded companies, can provide useful and relevant indications of investor expectations and, accordingly, useful indications of value for the services provided by the subject enterprise. In the circumstance that subject entities and comparable publicly traded companies exhibit largely dissimilar revenues and asset sizes, this method may not be ideal.

The first step in performing a Guideline Public Company Method involves appropriately identifying the universe of publicly traded companies that have sufficiently similar attributes to that of the subject enterprise in order to classify them as *comparables*. This analysis is best performed by using the framework of Suspects, Prospects, and Targets. A list of suspects can be derived from analyzing the industry classification for the subject enterprise's operations, utilizing either Standard Industrial Classification (SIC) codes or the North American Industry Classification System (NAICS) codes. The list of suspects is then filtered to include only those enterprises offering similar services, which is known as the list of prospects. From the list of prospects, the potential comparables are further analyzed based on more distinct criteria, such as size, geographic diversity, product/service diversity, ownership structure, etc., to determine the final targets to be used as comparable companies in the Guideline Public Company Method.

After a sufficient number of comparables are identified, the market value of invested capital (MVIC) is calculated for each of company. MVIC is calculated as the summation of the market value of equity capital (both common stock and any preferred stock outstanding) and the market value of interest-bearing debt (both long-term and short-term interest-bearing debt and capital leases). Note that, market values of both equity and debt are used in determining MVIC, in contrast to the book values, which are reported on the balance sheet. MVIC can then be used in the denominator of various *market multiples* to derive value for the market value of invested capital of the subject enterprise, e.g., MVIC/Revenue and MVIC/EBITDA. If the valuation engagement is to determine the Market Value of Equity for the subject enterprise, the valuation analyst can either: (1) subtract the market value of interest-bearing debt of the subject enterprise from the MVIC calculated for the subject enterprise using MVIC market multiples or (2) the

164 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 265.

valuation analyst can calculate market multiples of Equity (Price) for the comparables and use that information to calculate the value of the Equity of the subject enterprise. Note that additional adjustments (either discounts or premiums based on control and/or marketability) may be applicable to the values derived from using market multiples in order to derive the appropriate type and level of value for the subject property interest.

In addition, smaller companies often have more business and financial risk than larger companies and tend to have lower pricing multiples than larger companies.[165] Therefore, using the market multiples described above, which are primarily from larger publicly traded companies, to derive pricing multiples for smaller, privately-held enterprises, can distort the indications of value for the smaller companies (if not appropriately adjusted). When these market multiples from larger companies are utilized to develop indications of value for the smaller, privately-held subject practice, the valuation multiples may need to be adjusted to reflect that size disparities exist between the subject enterprise and the comparable publicly traded companies.

One of the size adjustment techniques involves the measurement of differences in the historical equity returns of smaller companies as compared to larger companies (measured by market value of equity) from data compiled and reported by credible sources (for example, the *Valuation Handbook,* published by Duff & Phelps, which has replaced the discontinued *Stocks, Bonds, Bills, and Inflation Yearbook, Valuation Edition* (SBBI) that was previously published by Ibbotson). The following equations may be utilized to adjust both the MVIC/Revenue and MVIC/EBITDA multiples to reflect size disparities previously discussed:[166]

Exhibit 4-2: Size Adjustment to Valuation Multiples:

$$Adjusted\frac{MVIC}{Revenue}Multiple = \frac{1}{\frac{1}{UnadjustedMultiple} + VariantFactor(\%\frac{Equity}{MVIC}) \times SizePremium}$$

$$Adjusted\frac{MVIC}{EBITDA}Multiple = \frac{1}{\frac{1}{UnadjustedMultiple} + (\%\frac{Equity}{MVIC}) \times SizePremium}$$

Where:

Unadjusted Multiple = Multiple derived from guideline public company data

$\%\frac{Equity}{MVIC}$ = Market Value of Equity of the guideline public company divided by market Value of Total Invested Capital of the guideline public company

Size Premium = Difference between the arithmetic mean of returns of the guideline public company size decile compared to the subject enterprise size decile

Variant Factor = Net Revenue of the guideline public company divided by EBITDA of the guideline public company

165 "Financial Valuation, Applications and Models," James R. Hitchner, 2nd ed., John Wiley & Sons, Inc., 2006, p. 311.

166 "Adjusting Multiples from Guideline Public Companies" Business Valuation Resources, Teleconference Presentation, August 31, 2006, 2006, Exhibit 8; "Financial Valuation: Applications and Models" By James R. Hitchner, 2nd ed., Hoboken, NJ: John Wiley & Sons, Inc., 2006, p. 310-315.

Several measures of central tendency, i.e., mean, median, high, low, and the upper and lower quartiles, may be calculated and used to analyze the generated adjusted multiples in order to determine the optimal means of comparing the publicly-traded market transactions of the guideline companies' shares to a hypothetical transaction involving the subject enterprise. Multiple other considerations may factor into this analysis, such as: (1) comparison of the subject enterprise's operations to those of the guideline public companies; (2) stability of the physicians and providers of the subject enterprise; (3) the practice infrastructure and dynamic (e.g., as a department within a larger practice or a *stand-alone* entity, as well as any other arrangements, affiliations, or contracts); and (4) risk related to the probability of achieving management's projections utilized by this valuation.

The Guideline Public Company Method is susceptible to similar drawbacks as Merger and Acquisition Method, e.g., the lack of a sufficient number of comparable guideline companies and the difficulty in determining the existence of possible outlier within the data set.

In addition, there is a growing school of thought within the valuation community that the use of indicators from publicly traded stocks may not be reflective of the market for *closely held enterprises*, such as physician practices, outpatient centers, and other closely held healthcare enterprises, which may have unique drivers underlying their capital markets. Rob Slee, a well-known proponent of this concept and author of *Private Capital Market*, has stated:

> "Private companies, particularly those with annual sales of $5 million to $350 million, have unique capital market needs … The private capital markets are a complex interacting network of discrete exchanges rather than a unified structure. They differ greatly from the unified structure of public markets. For example, institutionalization in the public markets is developed more than in the private markets. In the public market, the players are licensed, highly regulated, and larger in size, and they tend to offer a wide range of financial services. In the private market, there is a host of smaller transfer players who provide discrete services. While these services are largely unregulated, the Securities and Exchange Commission and various state authorities provide some regulation."[167]

This evolving attention to distinction between public transactions and private transactions is reflected in the work of Professor John K. Paglia at the Center for Applied Research at Pepperdine University's Graziadio School of Business, which provides an Annual Capital Market Report which "tracks the private cost of capital and benchmarks both the current climate and projected outlook across multiple market segments for lending, investing and acquiring capital."[168]

In the healthcare industry this concept may not be as large a concern, due to the tendency of companies and the investors who invest in those companies to traverse back and forth from

167 "Private Capital Markets: the Valuation, Capitalization, and Transfer of Private Business Interests" By Robert T. Slee, John Wiley and Sons, Hoboken, NJ, 2011, p. xix, 5.

168 "2013 Capital Markets Report: Pepperdine Private Capital markets Project" By Dr. John K. Paglia, Denney Academic Chair and Associate Professor of Finance, Graziadio School of Business and Management, Pepperdine University, 2013.

privately held to publicly traded, such as HCA Holdings, Inc.[169] In selecting which market approach-based methods to employ (if any), the valuation analyst should balance consideration of the sufficiency, validity, and efficacy of the available transactional data reported, as well as the applicability of such indications of value as may be determined to arise out of observations from such distinct sources as historical transactional data of privately held companies and historical transactions of minority equity interests in publicly traded companies.

Prior Subject Entity (Practice) Transactions

Prior sales of the subject enterprise, whether in its entirety or partial, can provide a good estimate of value. As one of eight factors to be considered in appraising closely held businesses, RR 59-60 states:

> "Sales of stock of a closely held corporation should be carefully investigated to determine whether they represent transactions at arm's length. Forced or distress sales do not ordinarily reflect Fair Market Value nor do isolated sales in small amounts necessarily control as the measure of value. This is especially true in the valuation of a controlling interest in a corporation. Since, in the case of closely held stocks, no prevailing market prices are available, there is no basis for making an adjustment for blockage. It follows, therefore, that such stocks should be valued upon a consideration of all the evidence affecting the Fair Market Value. The size of the block of stock itself is a relevant factor to be considered. Although it is true that a minority interest in an unlisted corporation's stock is more difficult to sell than a similar block of listed stock, it is equally true that control of a corporation, either actual or in effect, representing as it does an added element of value, may justify a higher value for a specific block of stock."[170]

Purchase and sale agreement offers related to prior transactions, or bona-fide offers or letters of intent to sell or purchase an interest in the enterprise to be appraised, may provide indications of the enterprise's Fair Market Value and should be carefully reviewed to determine if the data is relevant as an indicator of value. However, for several reasons including the following, this is not always the case:

(1) The size of the interest in the prior transaction may be substantially and significantly different from that of the interest being valued;
(2) Transactions and offers may be few (if any) and the most recent transaction or offer may be dated years before the valuation date;
(3) Significant differences can occur in the operations of the enterprise being appraised subsequent to the prior transactions;
(4) It cannot be established that the selling price was negotiated in an arm's-length manner; and
(5) Prior transactions, including those within the company, are sometimes motivated by a desire to either reward performance and retain talent on the part of the seller or to ensure

169 "HCA, Giant Hospital Chain, Creates a Windfall for Private Equity" By Julie Creswell and Reed Abelson, The New York Times, August 18, 2012, http://www.nytimes.com/2012/08/15/business/hca-giant-hospital-chain-creates-a-windfall-for-private-equity.html?_r=0 (Accessed 3/19/15).

170 "Revenue Ruling 59-60, 1959-1" Internal Revenue Service, Cumulative Bulletin, p. 237.

job security, on the part of the buyer, by offering an interest at a discount or premium unrelated to the Fair Market Value of the subject enterprise. This is undue motivation, which is proscribed in the definition of Fair Market Value.

ASSET AND COST APPROACHES

Asset/cost approach-based methods seek an indication of value by determining the cost of reproducing or replacing an asset. This approach is sometimes utilized in healthcare appraisal when the entity has little or no net economic benefit stream to be valued and/or in a circumstance where the entity is not being considered the basis of a *going concern*.[171] It is often also used for the valuation of healthcare intangible assets, where there may be significant regulatory risk related to anti-kickback and Stark statutes in employing an income approach-based method.

There are several methods that may be utilized the under asset/cost-based approach, including: (1) Asset Accumulation Method; (2) Liquidation Value Method; and (3) Excess Earnings Method.

Asset Accumulation Method

The Asset Accumulation Method, also known as the Adjusted Net Asset Value Method, estimates the value of the *total invested capital* of an enterprise by identifying, distinguishing, disaggregating, and summing the market values of both *tangible* and *intangible* component assets.[172]

Challenges with this method include determining which assets can legally be sold and to whom. Further, determining the Fair Market Value of residual goodwill, separate and distinct from the intangible assets, requires the use of some type of capitalization of earnings method, with the same difficulties noted previously.

Liquidation Value Methods

Liquidation value methods, either by orderly or forced disposition, estimate the value of an enterprise by determining the present value of the net proceeds from liquidating the company's assets and paying off liabilities. The *orderly* method is used to describe a situation in which the sell-off process is conducted in an organized and systematic fashion under a reasonable timeline constructed by the seller. In this scenario a lesser degree of urgency exists. Under the *forced* method, the seller no longer is in a situation to proceed at its own discretion, with all or the majority of the assets being sold at approximately the same time in a relatively quick fashion.[173] Generally, the orderly liquidation value method will yield a value greater than the value that may be determined under the forced liquidation value method.

171 "Understanding Business Valuation: A Practical Guide to Valuing Small to Medium Sized Businesses" By Gary R. Trugman, 3rd ed., New York, NY: American Institute of Certified Public Accountants, Inc., 2008, p.281.

172 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 377; Also refer to *Value In-Exchange*, which discusses the valuation tenet of value in exchange as an orderly disposition of the assets.

173 "Financial Valuation: Businesses and Business Interests" By James H. Zukin, Research Institute of America, Inc., 1990, p. 2-43.

Excess Earnings Method

The excess earnings method, also called the *treasury method* or the *IRS formula method,* is based on Revenue Ruling 68-609 (RR 68-609) and is considered by many in the valuation community to be a hybrid method, combining elements of an asset/cost-based approach with elements of an income approach.

The excess earnings method values the intangible assets of the enterprise being appraised utilizing a residual technique.[174] First, a portion of the net economic benefit stream is attributed to a return on net tangible assets utilizing a market-derived cost of capital for similar tangible assets. Then, an appropriate portion of the benefit stream is attributed to the Fair Market Value of the replacement cost of services provided by the owner as owner compensation. Finally, the dollar amount of the benefit that remains after the deduction of these two amounts (the *residual*) is then presumed to be attributable to the intangible assets. This amount of the benefit stream, which has been determined to be attributable to the intangible assets of the subject enterprise, is then capitalized using a risk-adjusted equity rate of return, and the resulting indicated value of the intangible assets is combined with (added to) the value of the tangible assets of the enterprise being appraised to arrive at an estimate of overall asset value for the subject enterprise as a going concern.

Challenges in using the excess earnings method include (1) determining the net tangible asset value, (2) determining the earnings base to be capitalized, (3) determining a reasonable rate of return on tangible assets, and (4) determining the capitalization rate to be applied to the *excess earnings*. In addition, common errors in utilizing the excess earnings method include (1) failing to allow for owner's salary, (2) failing to use realistic normalized earnings, (3) utilizing unadjusted book values of assets, and (4) selecting the inappropriate capitalization rate.[175]

LEVEL OF VALUE—DISCOUNTS AND PREMIUMS

With each valuation method utilized, certain adjustments should be considered based upon the specific requirements of each engagement and the inherent indication of value, or *level of value,* that results from each method. While many different discounts and premiums exist, the most prevalent in closely-held businesses are the discount for lack of marketability, control premiums, and control discounts.

There are inherent risks relative to the liquidity associated with ownership of controlling interests in both *closely held* and *freely-traded* companies, as opposed to minority ownership interests. Owners of entire companies cannot simply contact a buyer or broker to sell their interest instantaneously, in contrast to investors in the stock market, who are able to sell their *freely-traded* minority interest in a company within minutes and receive cash proceeds in a matter of days.[176]

174 Ibid, p. 2-44.
175 "Valuing Small Businesses and Professional Practices" By Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweishs, 2nd ed., Homewood, IL: Business One Irwin, 1998, p. 223-227.
176 "Business Valuation: Discounts and Premiums" By Shannon P. Pratt, John Wiley & Sons, Inc., 2001, p. 17; "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 138.

Further, as pointed out in Shannon Pratt's *Valuing a Business*, the controlling interest holder in a *closely held* company would have the ability to liquidate their interest only by either: (1) effectuating a public offering of the controlling block of stock or (2) by selling their interest in a private transaction.[177] The transactional considerations that a controlling owner may incur, should they wish to divest of their ownership interest include the following:

(1) "Uncertain time horizon to complete the offering or sale…
(2) Cost to prepare for and execute the offering or sale…
(3) Risk concerning eventual sale price…
(4) Noncash and deferred transaction proceeds…[and]
(5) Inability to hypothecate."[178]

The controlling interest holder of a *freely-traded* company would typically have to accept some level of price concession in order to sell a large block of stock at once (referred to as a *blockage discount,* which also occurs for large blocks of minority interests).[179]

Thus, a discount may be applicable to the value of a controlling interest in a *closely held* company, due to the inherent illiquidity of the investment, which may include the explicit and implicit costs incurred in developing the market, assessing the viability of the business interest, as well as those costs associated with preparing the business for a potential transaction. Such a discount is commonly referred to as a *discount for lack of marketability.*

Most of the empirical research supporting the notion of a *private company discount,* i.e., a *discount for lack of marketability* for closely held companies, centers on the difference in acquisition multiples of public and private companies.[180] However, it is the view of some appraisers in the valuation profession that there is no conceptual basis in applying a *discount for lack of marketability* to a controlling interest.[181] These appraisers point to a study conducted by John Phillips and Neill Freeman published in the *Business Valuation Review* in September 1995, which attributes the indicated discounts resulting from the *Mergerstat Review Study* of P/E ratios of acquisitions of public and private companies to differences in size, industry, and profitability.[182]

Other observers of the differences in the acquisition multiples between public and private companies have hypothesized the following reasons for the variance:

(1) ***Exposure to the market***, i.e., publicly traded companies are listed in multiple news outlets and their audited financial data is available to the public; the lack of this market exposure for private companies requires more resources to be spent finding

177 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 441.
178 Ibid.
179 "Blockage Discounts for Publicly Traded Stock" by George Hawkins, ASA, CFA, Banister Financial, Inc., FAIR VALUE, Volume X, Number 3, Fall 2001, p. 1.
180 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 443-445.
181 "Quantifying Marketability Discounts" by Chris Mercer, Memphis, TN: Peabody Publishing, (1997), p. 325-344.
182 See reference to "Do Privately-Held Controlling Interests Sell for Less?" By John R. Phillips and Neill W. Freeman, Business Valuation Review, Vol. 14, No. 3 (September 1995), p. 102-113, in "Quantifying Marketability Discounts" by Chris Mercer, Memphis, TN: Peabody Publishing, (1997), p. 340-341.

possible acquisition targets and obtaining information necessary to assess a proper bid price;

(2) ***Quality of Financial Information***, i.e., more extensive financial reporting requirements for publicly traded companies, in contrast to private companies, may lead to information asymmetries between buyers and sellers of private companies, resulting in an increased perception of riskiness for investors in private companies compared to investors in publicly traded companies; it should be noted that even though publicly traded companies may still be able to "mask" certain information about the company through questionable accounting practices, it is assumed that private companies, operating under less stringent reporting requirements, would have a greater ability to manipulate their accounting data; and

(3) ***Size Effect***, i.e., similar to the argument set forth by the *Phillips and Freeman Study*, the private company data set is typically comprised of smaller companies as compared to the public company data set; smaller firms are typically riskier than larger firms, as most empirical studies on the matter have shown, hence the more risky the firm, the higher the return that would be required by a typical investor, and therefore the lower the indicated value result.[183]

Studies performed more recently regarding the difference in acquisition multiples between public and private companies include the *Koeplin, Sarin, and Shapiro Study* and the *Officer Study*. These studies indicate the existence of a *private company discount*, even after controlling for industry and size, when making comparisons of the valuation multiples. The results of these most recent studies vary substantially depending on the valuation multiple chosen for the analysis. The *Koeplin, Sarin, and Shapiro Study* reported that the comparison of Enterprise Value/Sales multiples derived from acquisitions of public and private companies indicated no *private company discount*, the comparison of Enterprise Value/EBITDA multiples indicated an 18% discount, and the comparison of Enterprise Value/EBIT multiples yielded a 30% discount.[184] The *Officer Study*, reflected similar variability in its results.[185]

In addition to the liquidity risks inherent in controlling interests (both of *closely held* and *freely-traded* enterprises), there exist inherent risks relative to the liquidity of investments in *closely held*, non-public companies that are not relevant to the investment in companies whose shares are *freely-traded*.[186] This risk of liquidity is distinctly different from that of the controlling interest liquidity risk mentioned above, and typically is observed using shares of minority interests.

Over the years, there have been several empirical studies performed attempting to quantify a *discount for lack of marketability* related to ownership of a *closely held* business interests in contrast to a *freely-traded* interest. These studies can be classified into two categories:

183 "Valuing a Business: The Analysis and Appraisal of Closely Held Companies" By Shannon P. Pratt, and Alina V. Niculita, 5th ed., New York, NY: McGraw-Hill, 2008, p. 443-445.

184 "The Private Company Discount" by John Koeplin et al., Bank of America Journal of Applied Corporate Finance, Vol. 12, No. 4 (Winter 2000), p. 94 -101.

185 "The Price of Corporate Liquidity: Acquisition Discounts for Unlisted Targets" by Micah Officer, Journal of Financial Economics, Vol. 83 (2007), p. 571-598.

186 "Valuation Discounts for Lack of Marketability," by Robert James Cimasi, Physician's News Digest, Aug. 2007, www.physiciansnews.com/business/807 cimasi.html (accessed December 11, 2010).

(1) transactions involving restricted stock of publicly traded companies and (2) private transactions of companies prior to their initial public offering (IPO).

> Inherent risks exist and are relative to the liquidity of investments in closely held, nonpublic companies that are not relevant to the investment in companies whose shares are publicly traded.
>
> ***Robert James Cimasi, Aug. 2007.***

A control premium is an increase to the pro rata share of the value of the business that reflects the impact on value inherent in the management and financial power that can be exercised by the holders of a control interest of the business, usually the majority holders.

Conversely, a *discount for lack of control (DLOC)* is the reduction from the pro rata share of the value of the business that reflects the impact on value of the absence or diminution of control that can be exercised by the minority equity holders of the entity being appraised.

The mathematical relationship between the control premium and the DLOC can be expressed by the following formula:[187]

$$\text{Discount for Lack of Control} = 1 - (1 \div (1 + \text{Control Premium}))$$

When attempting to quantify the appropriate *discount for lack of control* to be applied to the indicated level of value of the subject property interest, the specific conditions and factors related to the industry and the typical mix of the type of buyer in the universe of hypothetical purchasers of entities similar to the subject enterprise, e.g., strategic vs. financial buyers, should be considered when analyzing the results and determining the pertinence and application of the empirical studies described below.

There are several empirical studies available that attempt to quantify control premiums. Two notable studies are:

(1) Mergerstat Review – an annual series study of the premium paid by investors for controlling interests in publicly traded stock[188] and
(2) Control Premium Study – a quarterly series study that compiles control premiums of publicly traded stocks by attempting to eliminate the possible distortion caused by speculation of a deal. [189]

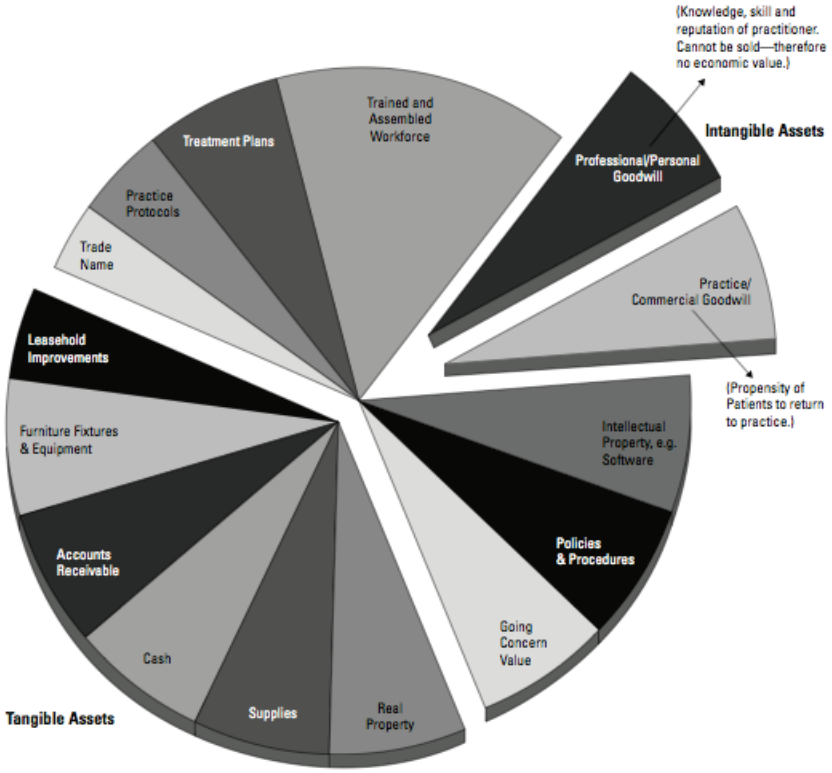
CLASSIFICATION AND VALUATION OF ASSETS

As related to the valuation of assets, once the subject enterprise and interest have been defined, the appropriate classification of assets and the goodwill related to the professional practice is critical to the valuation process. The classification of assets may be initiated by condensing the

187 "Business Valuation: Discounts and Premiums" By Shannon P. Pratt, John Wiley & Sons, Inc., 2001, p. 17.
188 "Mergerstat Review 2013" (2012 data), FactSet Mergerstat, LLC, Newark, NJ: Factset Mergerstat (2013), p 81.
189 "Factset Mergerstat® / BVR Control Premium Study™ Advanced Search: 80 Healthcare"Business Valuation Resources, 2014, www.bvmarketdata.com/CPSAdvSearch.asp (Accessed 2/7/2014).

existing assets within the context of two categories: tangible and intangible. See a general definition of both terms in *Overview*. Figure 4-5 depicts a representative classification of tangible and intangible assets in the context of a professional practice.

Figure 4-5: Classification of Intangible and Tangible Assets



Professional healthcare practices are only one of a wide range of many different and unique healthcare service sector enterprises, and each will have a unique and distinct profile regarding the likelihood of existence of the various specific assets. Although the existence or nonexistence of any of these distinct assets in the various types of healthcare service sector enterprises is specific to the subject enterprise being valued, it may be useful to review some general observations that may be made regarding that likelihood, based on the historical development, changes in the industry, and subsequent changes in organizational structure and operation of the various types.

Table 4-1 provides an illustrative analysis of the likelihood of the existence of specific assets of professional practice or physician-related organizations. Following a listing of the types of tangible assets is a listing of the types of intangible assets often considered, as classified into ten main categories. It should be noted that this representative listing is for illustrative purposes only.

Table 4-1: Likelihood of Existence of Specific Assets of Physician Organizations

LIKELIHOOD OF EXISTENCE OF SPECIFIC ASSETS OF PHYSICIAN ORGANIZATIONS 1. Almost always 2. Often 3. Sometimes 4. Almost never, minimal	Solo	Office Based Group	Academic	Hospital Based Group	IPA	GPWW	MSO	PPMC	Hospitalist
TANGIBLE									
Accounts Receivable	1	1	3	1	4	4	4	2	2
Cash, Investments	3	2	4	2	4	4	3	2	2
Furniture, Fixtures, and Equipment	1	1	4	4	4	4	1	2	4
Leasehold Improvements	3	1	4	4	4	4	3	2	4
Real Property	3	3	4	4	4	4	3	3	4
Supplies	1	1	3	4	4	4	3	2	4
Medical Library	4	2	2	3	4	4	4	4	4
INTANGIBLE									
(1) Payor/Customer-Related									
Managed-Care Agreements	1	1	1	1	1	3	4	2	1
Provider Service Agreements/Medical Directorships	3	2	1	1	4	3	4	3	1
Direct Contracting Customer Lists	3	2	3	4	2	4	4	3	3
HMO Enrollment Lists	4	3	3	4	2	4	4	2	4
(2) Goodwill and Patient-Related									
Custody of Medical Charts and Records	1	1	3	4	4	4	4	3	4
Personal/Professional Goodwill	1	1	1	2	4	4	4	3	2
Practice/Commercial Goodwill	3	2	3	3	3	3	3	3	3
Patient Lists/Recall Lists	2	2	3	4	4	4	4	3	4
(3) Human Capital-Related									
Employment/Provider Contracts	4	1	1	1	3	4	3	2	1
Trained and Assembled Workforce	2	1	4	3	3	4	2	2	4
Policies and Procedures	3	2	3	2	2	3	2	2	3
Depth of Management	4	2	3	4	3	3	2	2	4
(4) Intellectual Property-Related									
Practice Protocols	4	2	2	2	3	3	4	3	2
Treatment Plans/Care Mapping	3	2	2	2	3	3	4	3	2
Procedural Manuals/Laboratory Notebooks	4	2	2	3	4	4	3	2	3
Technical and Specialty Research	4	3	2	4	4	4	3	3	3
Patents and Patent Applications	4	3	2	3	4	4	4	4	4
Copyrights	4	3	3	4	4	4	4	4	4
Trade Names	3	2	4	4	3	3	3	1	4
Trade Secrets	4	3	3	4	3	3	4	3	4
Royalty Agreements	4	4	3	4	3	3	3	3	4

(continued)

LIKELIHOOD OF EXISTENCE OF SPECIFIC ASSETS OF PHYSICIAN ORGANIZATIONS 1. Almost always 2. Often 3. Sometimes 4. Almost never, minimal	Solo	Office Based Group	Academic	Hospital Based Group	IPA	GPWW	MSO	PPMC	Hospitalist
(5) Locations and Operations-Related									
Management Information/Executive Decision	4	2	3	3	2	3	2	1	4
Favorable Leases-Leasehold Interests	2	3	3	4	4	4	3	3	4
Going Concern Value	3	2	3	4	3	4	2	2	4
Asset Assemblage Factors	3	2	4	4	4	4	2	2	4
Historical Documents/Charts/RVU Studies	2	2	2	3	3	4	3	3	4
Supplier Contracts, e.g. Group Purchasing Orgs.	3	2	2	4	4	3	2	2	4
(6) Governance/Legal Structure-Related									
Organizational Documents	4	1	2	1	3	2	1	1	4
Non-Compete Covenants	4	1	2	1	4	3	1	1	3
Income Distribution Plans	4	1	1	1	4	1	1	1	4
(7) Marketing and Business Development-Related									
Print Ads, Telephone #s, Billboards, etc.	2	2	3	4	4	3	2	3	4
Franchise/License Agreements	3	3	4	4	4	4	3	3	4
Joint Ventures/Alliances, e.g. “Call-a-nurse”	3	2	2	4	4	3	3	2	4
Market Entrance Barriers/Factors	3	2	2	2	3	3	3	3	3
(8) Regulatory/Legal-Related									
Facility Licenses	4	3	4	4	4	3	3	3	4
Medical Licenses	1	1	1	1	4	4	4	4	1
Permits—Real Estate Special Use	3	3	4	4	4	3	3	3	4
Litigation Awards and Liquidated Damages	4	3	4	3	3	3	3	3	4
Certificates of Need	4	3	4	4	4	3	3	3	4
Medicare Certification/UPIN	1	1	1	1	4	4	4	3	1
Certifications—e.g. NCQA, AAAHC, JCAHO	3	3	3	3	3	4	4	3	1
(9) Financial/Revenue Stream-Related									
Office Share	3	3	4	4	4	2	2	3	4
Management Services Contracts	4	3	4	4	4	2	1	1	1
Financing Agreements	4	3	4	4	4	3	3	3	4
Underwriting/Private Placement Memoranda	4	3	4	4	4	3	2	1	4
Budgets/Forecasts/Projections	4	2	3	3	2	3	2	1	4
(10) Technology-Related									
Computer Software/Network Integration	4	2	4	4	2	3	2	1	4
Technical/Software Documentation	4	3	4	4	2	3	2	1	4
Maintenance/Support Relationships	2	1	4	4	1	2	1	1	4

Additional discussion and definitions regarding a representative list of intangible assets of a professional practice (referenced in Table 4-1) may be found in *Classification and Valuation of Intangible Assets*.

This relationship of the respective values of tangible and intangible assets relative to the value of the entire practice enterprise was illustrated in the classic 1937 text by James C. Bonbright, *The Valuation of Property: A Treatise on the Appraisal of Property for Different Legal Purposes*:[190]

> "What is the value of the left-hand member of a pair of $4 gloves? Practically nothing if the part is valued separately from the whole; approximately $4 if the part is valued as a part of the larger whole. Obviously, neither of these figures, zero of $4 per glove can be multiplied by two as an expression of the value of a pair of gloves. On the other hand, if we start with the $4 value of the entire pair and prorate that figure between the two gloves by dividing by two, we get a value per glove that is utterly meaningless.
>
> The example of the gloves presents an almost perfect illustration of a case where each part of an organic whole must be valued either at zero or else at the full value of the whole, depending on whether the part is valued as a separate commodity or as a part of the larger unit. This situation prevails whenever each of three conditions is met: (a) when each part is utterly worthless except as a part of the whole, (b) when no one part can be replaced except at a cost at least equal to the value of the whole, or except after a fatal delay, and (c) when each part is indispensable to the functioning of the whole. Seldom, however, are all these conditions met with in the valuation of property. Many of the assets of a business enterprise, for example, can be disposed of, separately from the business, at a substantial price; most of them can be replaced in time to save the business and at a cost much less than the value of the whole business; many of them are not indispensable to the business the enterprise could get along without them, though with a loss of earning power. Each asset, therefore, is worth neither zero on the one basis of valuation, nor the full value of the entire enterprise on the other basis.
>
> It is nevertheless true that, with rare exceptions, there is a wide disparity between the value of an entire business enterprise and the sum of the values of its various assets or parts. This truth is well recognized when the comparison is between the value of the whole business and the separate liquidation values of the assets. But it has been frequently overlooked, or even expressly denied, when the comparison is between the value of the business and the sum of the values of the assets, valued as parts of the whole. Misled by the mathematical postulate, applied to spatial relationships, that 'the whole is equal to the sum of its parts,' many courts, and even some expert appraisers, have falsely inferred that the value of an economic whole is equal to the sum of the values of the parts. They have therefore often assumed that the value of the intangible assets of a business is equal to the value of the business itself minus the value of the tangibles…"[191]

As previously mentioned, tangible assets of a subject enterprise often are defined as those items owned by the subject enterprise that possess a physicality, that is, they can be seen or touched. The intangible assets of the subject enterprise often are defined as those nonphysical items that

190 "Hence, in enterprise valuations, the fixed assets are seldom appraised at the liquidation values." "The Valuation of Property: A Treatise on the Appraisal of Property for Different Legal Purposes, Volume I" By James C. Bonbright, New York, NY: McGraw-Hill, 1937, p. 77.

191 "The Valuation of Property: A Treatise on the Appraisal of Property for Different Legal Purposes, Volume I" By James C. Bonbright, New York, NY: McGraw-Hill, 1937, p. 76-77.

grant certain specified property rights and privileges of ownership and that have or promise economic benefits to the owner(s) of the subject enterprise.

Although the major distinction between these definitions of tangible and intangible assets is the aspect of their *physicality,* this is not an exclusive definitional barrier. In fact, *physical* tangible assets also possess an *intangible* aspect with respect to the legal rights of property ownership attached to them. Further, some physical evidence or element of an intangible asset often exists that reassures its economic existence. For example, relationships between an employer and its employees that form the basis of *trained-and-assembled-workforce-in-place* are intangible; however, they may be evidenced by employment agreements. Intellectual property rights, such as trade names, trademarks, service marks, patents, and copyrights, are intangible assets; however, they may be evidenced by certificates, licenses, and other related documents.

When determining whether some aspect of a business enterprise, or some factor of the operation and performance of that enterprise in the market, qualifies as an intangible asset, the aspect or factor should be endowed with several attributes characteristic of *property* that may be ascribed to it and that allow it to rise to the definition of an intangible asset. These traits, qualities, attributes, and characteristics include:

(1) The item should exist and be identified in a manner that allows it to be recognized as a legal property right that can be defended in court as private property and the ownership of which can be sold or transferred.
(2) The item should have some element of evidentiary support and documentation for its existence, including both the inception and the termination of its existence in relation to an action, circumstance, or event that can be legally described and identified.
(3) The item should, despite its lack of physical substance, generate a measure of economic benefit to its owner.[192]

With regard to the concept of property as an economic physicality, James C. Bonbright states:

> "These perplexing questions as to the nature of the thing to be valued might seem to be of no concern to the student of valuation, however . . . [h]ow one shall define property in a given case is bound up with the question how one shall find value in that same case. The two problems must be treated together by persons who understand their interrelationship."[193]

From a valuation and economic perspective it may be useful to consider property within the context of four principal categories:

(1) Personal property that is tangible;
(2) Personal property that is intangible;
(3) Real estate property that is tangible; and
(4) Real estate property that is intangible.

192 "Guide to Intangible Asset Valuation" By Robert F. Reilly, CPA, and Robert P. Schweishs, ASA, New York, NY: American Institute of Certified Public Accountants, Inc., 2013, p. 3.
193 "The Valuation of Property: A Treatise on the Appraisal of Property for Different Legal Purposes, Volume I" By James C. Bonbright, New York, NY: McGraw-Hill, 1937, p. 99.

In recognition that real property has been defined as, "the bundle of legal rights which people have in . . . the very objects, particularly the tangible objects to which these rights attach," and with the given that any given legal right is *intangible,* it is a logical deduction that real property is intangible. However, the real estate appraisal industry has distinguished *real property* ("the intangible bundle of rights, interests, and benefits inherent in the ownership of real estate") from real estate ("the tangible, physical entity").[194]

In addition to the complexity of distinguishing between *intangible real property* and *intangible personal property*, the issue of *property as an economic physicality* involves other aspects of the definition of intangible assets. These include such attributes as whether the item can be touched and felt (tangible), seen or observed (visible), and whether it has a physical, material body (corporeal).

Having determined how to adequately classify tangible versus intangible assets, the following sections further discuss the classification and valuation of types of tangible and intangible assets.

CLASSIFICATION AND VALUATION OF TANGIBLE PERSONAL PROPERTY

When determining the value of *tangible personal property*, the three general valuation approaches, i.e., the *Income, Market,* and *Asset/Cost,* should be considered before the appropriate method for the specific appraisal is selected for the assignment.[195] Market and Asset/Cost approaches are commonly used in valuing *tangible personal property*.

As related to *tangible personal property,* the *Market Approach* can be briefly summarized as "that approach to value where recent sales and offering prices of similar property are analyzed to arrive at an indication of the most probable selling price of the property being appraised."[196] Similar to the application of the Market Approach-based Merger and Acquisition Method to enterprises, transactional pricing data for comparable tangible personal property asset(s) with homogenous badges of comparability to the subject tangible personal property asset, should be identified. This may be achieved by searching new and/or used medical and office equipment dealers, as well as the Internet, for sales or recently sold prices of tangible personal property asset(s) similar to the subject tangible personal property asset(s).

Adjustments to the comparable tangible personal property asset may be warranted based on the characteristics of the comparable property, e.g., condition; date of manufacture; additional/deficient product features; type of sale; or the inclusion/exclusion of the costs of transportation, installation, and assemblage of the asset.[197] It should be noted that the prices of goods and services change over time, and the valuation date of the appraisal and the comparable market transaction date are most often not the same.

194 "The Dictionary of Real Estate Appraisal" Forth Edition, The Appraisal Institute, 2002, p.232, 234.
195 "Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets," By Machinery and Technical Specialties Committee of the American Society of Appraisers, 3rd ed., Washington, DC: The American Society of Appraisers, 2011, p. 17.
196 "Fair Market Value Concepts" in "Appraising Machinery and Equipment" By Robert Svoboda, American Society of Appraisers, 1989, p. 110-119.
197 Ibid.

In regards to the valuation of tangible personal property utilizing an Asset/Cost-based approach, it is important to consider the applicable amount of depreciation related to the subject property. Depreciation, in its economic interpretation, in contrast to its tax accounting interpretation, is the loss of value in an asset due to the physical deterioration in the condition of the asset resulting from its use over time, which can be calculated based on the age and condition of the asset, as well as various forms of obsolescence. Obsolescence can be categorized as functional, technological, or economic, and is simply the loss of value due to deterioration in the utility of the asset.[198]

Functional and technological obsolescence occurs when replacement assets would have greater utility than the original or existing equipment. Economic obsolescence occurs when some event or circumstance, external to the property itself, is responsible for a decreased ability of the equipment to properly perform its intended task. Examples of economic factors contributing to an impairment of an asset include decreased demand for a product; limited production life; and environmental regulations imposed on a type of asset that might limit or impede its operation.[199] Accordingly, the economic Fair Market Value of the asset being appraised should include the application of a devaluage factor to reflect both physical deterioration, as well as the applicable types of obsolescence, as illustrated below in Exhibit 4-3.

Exhibit 4-3: Application of Physical Deterioration and Obsolescence

Current Cost of Replacement or Reproduction In-Place, In-Use	
< + / - >	Physical Deterioration
< + / - >	Functional Obsolescence
< + / - >	Technological Obsolescence
< + / - >	Economic Obsolescence
Results In:	Fair Market Value In-Place, In-Use

When valuing tangible personal property utilizing an Asset/Cost Approach, two general methods may be employed, i.e., replacement cost new and reproduction cost new. Replacement cost new is the cost to replace the subject asset with an asset of equal utility based on current prices as of the valuation date. The reproduction cost new is calculated by applying an appropriate index (or trending factor) to the historical cost of the tangible personal property to estimate the movement of prices over time.[200] The calculation of the reproduction cost new for the subject asset would be calculated as:

$$\text{Reproduction Cost New} = \frac{\text{Valuation Date Index}}{\text{Acquisition Date Index}} \text{ Cost of Acquisition}$$

Note that, each type of tangible personal property may experience different levels of inflation, requiring the use of asset specific price indices, e.g., medical equipment indices and office equipment indices, to adjust the historical costs to the present.

198 "Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets" By Machinery and Technical Specialties Committee of the American Society of Appraisers, 3rd ed., Washington, DC: The American Society of Appraisers, 2011, p. 59.

199 "The Appraisal of Machinery and Equipment" By John Alico, et al., American Society of Appraisers, ASA Monograph #2, Washington, D.C.,1969, p. 47-51.

200 For a price indexing source, see "Valuation Quarterly" By Marshall Valuation Service, Los Angeles, CA: Marshall & Swift/Boeckh, LLC, 2013.

Following the determination of the indexed price for the subject tangible personal property, the economic value is determined by applying a devalue percentage to the indexed price (reproduction cost new) to account for physical deterioration and various elements of obsolescence, i.e., functional, technical, and/or economic, based on the economic useful life of the subject tangible personal property; the age of the subject tangible personal property; the condition of the asset; and the current capabilities of similar assets in the market.[201] Table 4-2, below, sets forth an example of valuing tangible personal property based on the method described above.

Valuation of Accounts Receivable

Similar to the restatement of tangible personal property, the accounts receivable (AR) for a subject enterprise is typically stated on the balance sheet at historical cost, in contrast to market values. Therefore, the AR is often restated to reflect actual, expected collections rather than the book value. Adjustments made to the net accounts receivable to reflect the Fair Market Value typically include: (1) application of the historical collection rate to gross receivables, which are typically comprised of gross charges, i.e., charges before contractual allowances; (2) a deduction for doubtful amounts of collections; (3) a deduction for the cost of collection; and (4) a present value adjustment to reflect the time value of money.

CLASSIFICATION AND VALUATION OF INTANGIBLE ASSETS

There are many sources that attempt to describe what *intangible assets* are and what they are not. However, many of the definitions are narrow in scope and were created for a specific purpose. From an economic and valuation perspective, intangible assets should exhibit certain qualifications, such as those espoused by Robert Reilly and Robert Schweihs, including that they:

(1) "…should be subject to specific identification and should have a recognizable description.
(2) …should be subject to legal existence and legal protection.
(3) …should be subject to the right of private ownership, and the private ownership should be legally transferable.
(4) …should [have] some tangible evidence or manifestation of [their] existence…
(5) …should have been created or have come into existence at an identifiable time or as the result of an identifiable event.
(6) …should be subject to being destroyed or to a termination of existence at an identifiable time or as the result of an identifiable event."[202]

Methods within each of the three general approaches to valuation, i.e., *Income, Market, and Asset/Cost,* should be considered when the engagement calls for the valuation of *intangible assets*. Regardless of the *valuation method* chosen for a particular engagement, the valuation of

201 "Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets," By Machinery and Technical Specialties Committee of the American Society of Appraisers, 3rd ed., Washington, DC: The American Society of Appraisers, 2011, Chapter 3.
202 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p. 5.

Table 4-2: Fair Market Value of Tangible Personal Property Utilizing Asset/Cost Approach

Type (1)	Description (2)	Location (2)	Room (2)	Quantity (2)	Economic Life (3)	Acquisition Date (2)	Acquisition Price (2)	Reproduction Cost (4)	Condition Factor (5)	Devaluage Percentage (6)	Restated Value (7)
M	Nicolet Vascular "Vasguard" Arterial Study wl Cart & HP #6940 Printer	Office #1	Ultrasound Room	1	5	9/15/2008	$30,850	$33,574	100%	73.33%	$8,953
M	Siemens E.Cam #756 Nuclear Camera Signature Series	Office #1	Nuclear Camera Room	1	5	7/15/2009	$242,000	$258,537	100%	59.33%	$105,138
M	General Electric "Case" Stress System w/Marquette #2000 Treadmill	Office #1	Treadmill Room	1	8	6/26/2007	$13,395	$15,305	100%	62.40%	$5,755
M	General Electric Pro Speed Tomography	Office #1	Computer Tomography Room	1	7	9/8/2004	$115,000	$153,148	100%	85.00%	$22,972
M	Philips #1E33 #100641 Ultrasound w/ Select Configuration	Office #1	Cardiovascular Testing	1	5	6/15/2009	$124,307	$131,771	100%	62.83%	$48,975
O	Panasonic DP-8060 Office Copier	Office #2	Mail Room	1	5	4/15/2008	$11,993	$13,067	100%	76.83%	$3,027
O	Panasonic #DP-C405 Office Copier	Office #2	Business Area	1	5	4/15/2008	$12,995	$14,159	100%	76.83%	$3,280
Total				**7**			**$550,540**	**$619,561**			**$198,101**
Weighted Average Economic Useful Life (8)											**5.24**

Notes:

1 Classified as Medical Equipment (M) or Office Equipment (O).

2 The acquisition cost and date were utilized to value these line items using the cost approach.

3 Estimated Useful Lives of Depreciable Hospital Assets: Revised 2008 Edition published by Health Data Management Group.

4 Equals the quotient of the current index price for type M or O (Column A) and the index at the Acquisition Date (Column G) times the Acquisition Price (Column H). Price index data from Marshall Valuation Service Quarterly Costs Indexes.

5 The Condition Factor accounts for the various elements of obsolescence, i.e., functional, technological, and economic, attributable to the subject tangible personal property asset, and is determined by VALUATOR based on the following table:

Condition Factor Adjustment	Asset Condition
120%	Excellent
110%	Very Good
100%	Good
90%	Fair
80%	Usable
70%	Poor
5%	Scrap

6 Devaluation percentage represents the physical deterioration inherent in the subject tangible personal property asset, and is calculated based on the Economic Life (Column F) and the Acquisition Date (Column G) and the valuation date (9/30/2012).

7 The Restated Value equals the Indexed Price (Column I) multiplied by the Condition Factor (Column J) with that product when multiplied by the difference of 1 and the Devaluage Percentage (Column K).

8 Equals the weighted average Economic Life (Column F), which is weighted based on Restated Value (Column L) less the difference between the valuation date (9/30/2012) and the Acquisition Date (Column G).

intangible assets requires that the valuation analyst perform a sufficient level of *due diligence* to appropriately *identify* the *existence of the intangible*, as well as to *project* the *future net economic benefit* to be derived from ownership of the subject intangible asset(s). Typically, this would entail gathering related information including the following considerations:

(1) The *historical costs* expended in creating the subject intangible asset, e.g., *legal, operational, opportunity*;
(2) The level of *net economic benefit* accruing to the existing owners; and
(3) The *highest and best use* of the subject intangible asset based on the *current use* of the subject intangible asset and the *market potential* for other uses of the subject intangible asset. [203]

Due to the various types of *distinct*, *intangible assets*, the future *net economic benefit* to be derived from each one is *not homogenous*. For example, for some intangible assets a *revenue stream* that is *directly* related to that specific intangible asset can be *quantified*. However, many intangible assets will not *directly* produce a *revenue stream*, but instead, will allow their owner the ability to *reduce or avoid* an *economic operating expense* and/or *economic capital expense*, e.g., *development of a trained and assembled workforce*. These *avoided costs,* quantified and projected in a similar manner to a *projected revenue stream*, form the basis for determining the *expected utility* to be derived from the ownership of the subject intangible asset.

Certain intangible assets may not possess the level of detail and information necessary to directly measure a revenue stream or an avoided cost. These may require the use of market comparable transactional data, with homogenous badges of comparability to the subject intangible asset, in order to derive an indication of their value. In addition, Asset/Cost Approach-based valuation methods can be used to determine the value of a subject intangible asset, assuming the availability of relevant data to quantify the amount of expenditure incurred historically to develop the subject intangible asset, or the cost to replace it with one that provides a similar level of utility. However, the valuation analyst should remember "that cost, price, and value are three separate and distinct valuation concepts,"[204] and, as such, cost may not necessarily provide an indication of value. This requires that a thorough examination of the specific facts and circumstances related to the subject intangible asset be considered before utilizing an Asset/Cost Approach-based valuation method to derive an indication of value. It should be noted that in the event that an intangible asset is produced internally, Asset/Cost Approach-based valuation methods should consider the profit incentive required by an investor in the subject intangible asset for its development, as well as the opportunity cost, represented by foregone alternative investments, incurred during the period of development, also referred to as an entrepreneurial incentive. The developer's profit margin and the opportunity cost should be added to the direct and indirect costs to derive an indication of value when utilizing an Asset/Cost Approach-based valuation method.[205] It should be noted that when using a Replacement Cost Method based upon

203 "Cost Approach of Health Care Entity Intangible Asset Valuation" By Robert F. Reilly, Journal of Health Care Finance, Vol. 39, No. 2, Winter 2012, p. 7-10.
204 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p. 120.
205 "Health Care Entity Valuation" By Charles A. Wilhoite, in "The Handbook of Business Valuation and Intellectual Property Analysis" By Robert F. Reilly and Robert P. Schweishs, New York, NY: The McGraw-Hill Companies, Inc., 2004, p.284.

market derived data, the developer's profit margin may already be included in the market determined Replacement Cost New.

In addition to the more commonly recognized valuation methods, there are several less common valuation methods and techniques that may be appropriate to utilize in valuing certain intangible assets. These include the Profit Split Method, the Relief from Royalty Method, and the Trended Historical Cost Method.

The Profit Split Method[206] is an Income Approach-based valuation method that requires the valuation analyst to determine an appropriate *profit split,* under the assumption that a third party owner of the subject intangible asset property licenses the use of that property for a percent or split of the profits. The split is based on the concepts of risk and investment return characteristics, including an analysis of the market conditions, financial profitability, and responsibility of each party. It should be noted that in the past some valuation analysts have relied upon the use of the 25% Rule attributed to Robert Goldscheider,[207] which dictates that 75% of the profit derived from intellectual property (IP) should go to the licensee for its role in the development of the IP, as well as the developer's assumption of operational and commercialization risks, while the other 25% accrues to the licensor.[208] Critics of the rule point to its "indefinite" level of application,[209] e.g., to gross profits or to operating profits, as well as its possible lack of reliability in withstanding litigation scrutiny under the standards set forth by *Daubert v. Merrell Dow Pharmaceuticals*[210] and *Kumho Tire Co. v. Carmichael*.[211] Proponents of the rule argue that it can be used as a rough tool in conjunction with detailed analysis of the specific facts and circumstances associated with the subject intellectual property.[212] Recent empirical tests of the rule, conducted by Gordon Smith and Russell Parr, have confirmed the rule's validity generally; however, they point out the wide variation in results by industry, and suggest that the rule be used in conjunction with other qualitative and quantitative analysis.[213] The use of the rule in litigation settings was dealt a setback in the recent case of *Uniloc U.S.A. v. Microsoft Corp*., which stated:

> "This court now holds as a matter of Federal Circuit law that the 25 percent rule of thumb is a fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation. Evidence relying on the 25 percent rule of thumb is thus inadmissible under Daubert and the Federal Rules of Evidence, because it fails to tie a reasonable royalty base to the facts of the case at issue."[214]

206 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p. 427.
207 "The Classic 25% Rule and the Art of Intellectual Property Licensing" By Robert Goldscheider, Duke Law & Technology Review, August 2011, No. 006, p. 1.
208 "Intellectual Property: Valuation, Exploitation, and Infringement Damages" By Gordon V. Smith and Russell L. Parr, Hoboken, NJ: John Wiley & Sons, Inc. 2005, p. 412, 419.
209 Ibid, p. 419.
210 "Daubert v. Merrell Dow Pharmaceuticals, Inc.," 509 U.S. 579 (1993).
211 "Kumho Tire Co. v. Carmichael".526 U.S. 137 (1999).
212 "The Classic 25% Rule and the Art of Intellectual Property Licensing" By Robert Goldscheider, Duke Law & Technology Review, August 2011, No. 006, p. 5-6.
213 "Intellectual Property: Valuation, Exploitation, and Infringement Damages" By Gordon V. Smith and Russell L. Parr, Hoboken, NJ: John Wiley & Sons, Inc. 2005, p. 421-426.
214 "Uniloc USA, Inc. v Microsoft Corp." 632 F.3d 1292, 1315 (Jan. 4, 2011).

The Relief from Royalty Method, also referred to as the Capitalized Royalty Income Method,[215] is a hybrid method using elements of both an Income Approach and a Market Approach. It is based on the premise that the owner of intellectual property would, in lieu of ownership, have to pay a third party a royalty fee to license the intellectual property. Therefore, by already owning the rights to the intellectual property, the subject enterprise is *relieved* of the royalty payments they would incur from licensing the intellectual property interest from another party.

To determine an appropriate royalty rate for the subject intellectual property interest, the valuation analyst should analyze comparable licensing agreements of applicable royalty rates, based on factors that include:

(1) Current industry conditions in contrast to those present when the comparable licensing agreement was developed;
(2) The uncertainty regarding the ability for the subject intellectual property interest to generate the level of economic benefit exhibited by the comparable intellectual property interest;
(3) The age of the subject intellectual property interest in relation to the comparable intellectual property interest; and
(4) The stage within the life cycle of both the subject intellectual property interest, as well as the comparable intellectual property interest.[216]

Note that, when performing a valuation under the standard of Fair Market Value, the analysis considers the hypothetical universe of typical buyers, sellers, owners, and investors, and *not* a specific buyer or specific class of buyer. Therefore, even though the purchaser or seller of the subject intellectual property interest may be a tax-exempt organization, it is typically assumed that the net economic benefit, derived from the application of comparable royalty rates to the subject intellectual property interest, should be tax affected, given that the hypothetical universe prescribed by the standard of Fair Market Value, would include both: (1) tax paying entities and (2) tax-exempt organizations, which are required to provide charitable services in lieu of a direct tax.

The Trended Historical Cost Method is an Asset/Cost Approach similar to the Reproduction Cost Method utilized for tangible asset valuation engagements, which starts by identifying the development and/or acquisition costs of the asset, and then indexes those historical amounts to estimate the anticipated costs to be expended to reproduce the subject intangible asset. [217] These *indexing* adjustments can be made by utilizing appropriate inflation-based indices, which are available from proprietary databases such as Marshall & Swift's *Valuation Quarterly,*[218] or publicly available Bureau of Labor Statistics data,[219] e.g., consumer price inflation, producer price inflation, or employment cost inflation, relevant to the specific category of identified cost being included in the method. Once the indexed costs have been calculated, any pertinent age-related deterioration and various forms of obsolescence, i.e., functional, technological, or

215 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p.428.
216 "Intellectual Property: Valuation, Exploitation, and Infringement Damages" By Gordon V. Smith and Russell L. Parr, Hoboken, NJ: John Wiley & Sons, Inc. 2005, p. 669-674.
217 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p.427.
218 "Marshall Valuation Service" Los Angeles, CA: Marshall & Swift/Boeckh, LLC, 2013.
219 For a description of each inflation index, see "Inflation, Prices, and Consumer Spending" Bureau of Labor Statistics, 2015, http://www.bls.gov/guide/geography/inflation.htm (Accessed 3/19/15).

economic, should be deducted from the indexed costs to determine the value of the subject intangible asset. Note that intangible assets do not experience physical wear and tear but still may be "used up" over time.[220]

The concept of a discount for lack of marketability (DLOM) for intangible assets is not straightforward,[221] and has been the subject of continual debate among participants in capital markets, the courts, and the business valuation profession. Intangible assets typically lack established, transparent, liquid markets, where they can be bought and sold in a fully disclosed manner, creating a deficiency in a supportable base of empirical data upon which to establish the size of a discount based on comparing transactions of freely-traded and closely-held intangible assets. Generally, unless the valuation method utilized to determine the value of the subject intangible asset includes data and information from freely-traded sources, a DLOM may not be warranted.

It should be noted that payment for intangible assets should be analyzed to ensure that they are not in violation of the restrictions related to the Anti-kick back and Stark regulations, which prohibit any consideration being paid, whether direct or indirect, based on the volume or value of referrals, or other business that the parties may otherwise be in position to generate for each other.

In addition to tangible assets, there are several types of intangible assets, which are described in more detail in the following sections, which may be considered in the valuation of a professional practice.

Payor or Client-Related Intangible Assets

Intangible assets that may be classified as relating to payors or clients include contracts, such as managed care agreements, provider service agreements, direct contracting customer lists, and HMO enrollment lists.

Managed care agreements may provide the subject enterprise with a reliable, continued revenue stream, which may reduce the volatility of its future net economic benefit stream, thereby creating additional value. In addition, provider service agreements (PSAs) can provide the subject healthcare enterprise with a competitive advantage through organizational stability, operational efficiencies, and patient convenience. Participation in HMO enrollment lists may provide healthcare professional practices and other providers with access to a stable revenue base from premiums generated by a specific patient base, i.e., the per member per month (PMPM) payments for a block of HMO enrollees to which they otherwise may not have access.

Similar to most intangible assets, payor- or client-related intangible assets, generally lack transparent, liquid markets with homogenous badges of comparability to the subject intangible asset, nullifying the use of a Market Approach-based valuation method. However, the valuation of payor- or client-related intangible assets may be based on an Asset/Cost Approach-based

220 "Cost Approach of Health Care Entity Intangible Asset Valuation" By Robert F. Reilly, Journal of Health Care Finance, Vol. 39, No. 2, Winter 2012, p. 16.
221 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p.155.

valuation method, such as the Replacement Cost Method, which in a similar manner to that of valuing tangible personal property, utilizes the current costs to recreate an intangible asset with the same or similar utility to the subject intangible asset to derive an indication of value.

Under certain circumstances payor- or client-related intangible assets may be valued utilizing an Income Approach-based valuation method, e.g., a Discounted Net Cash Flow Method, incorporating a *With and Without Technique*. The basic methodology would be to value the subject enterprise using the Discounted Net Cash Flow Method under two scenarios, i.e., one with the asset(s) in place, and another without the asset(s) in place, whereby the variance between the two scenarios would serve as an indication of value for the subject intangible asset. Caution should be taken to ensure that the income approach methodology does not take into consideration the volume or value of referrals in order to be in compliance with fraud and abuse laws and regulations.

Human Capital-Related Intangible Assets

Human capital, in contrast to financial or physical capital, comprises the investments in education, training, and medical care that are not separable from the person receiving the benefit and, therefore, do not have physical form in the same manner as financial and physical capital do.[222] This concept is embodied in the definition of *human capital* by Gary Becker as follows:

> "Schooling, a computer training course, expenditures on medical care, and lectures on the virtues of punctuality and honesty are capital too in the sense that they improve health, raise earnings, or add to a person's appreciation of literature over much of his or her lifetime… However, these produce human, not physical or financial, capital because you cannot separate a person from his or her knowledge, skills, health, or values the way it is possible to move financial and physical assets while the owner stays put."[223]

In the healthcare industry, human capital-related intangible assets include: staff/employee and provider employment agreements; trained and assembled workforce in place; non-copyrighted policies and procedures; and, depth of management.

The application of economic principles to support the existence of value that may be attached to certain human capital-related intangible assets, e.g., trained and assembled workforce in-place, is becoming increasingly important in healthcare valuation, as it is throughout the economy, a circumstance confirmed by Bianchi and Labory to wit:

> "The capital of a firm is less and less identifiable with its machines, buildings, and physical structures. It is increasingly related to the firm's capacity to combine skill, dexterity and judgment in an organisation (sic) capable of operating in terms of work to be done. This latter form of capital has an intangible nature and depends therefore on the valuation attached to it by the market."[224]

222 "Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education" By Gary Becker, Chicago, IL: The University of Chicago Press, 1993, p. 15-16.
223 Ibid.
224 "The Economic Importance of Intangible Assets" By Patrizio Bianchi and Sandrine Labory, Burlington, VT: Ashgate Publishing Company, 2004, pp.28-29.

Employee and provider employment agreements provide certain assurances as to the expectation of the continuity of those elements of the employment relationship, which comprise the human capital that adheres to the individual person, however defined under the terms of the agreement, that is to be transferred to the financial and economic benefit of the enterprise with whom the individual has contracted. Trained and assembled workforce in-place (TAWF) is the value of recruiting, hiring, and assembling employees, as well as their training. As defined by Elizabeth King, PhD, in the book entitled, *Valuation of Intangible Assets in Global Operations*:

> "An assembled workforce consists of a set of relationships between a firm and its employees (Smith and Parr, 1994: 89). Its value derives from the fact that these relationships are costly to establish in the first instance. From the standpoint of the firm, such costs include both the opportunity cost of time spent forging the necessary relationships and imparting the necessary training, and the explicit recruitment and training costs that it incurs in the process (Becker, 1964: 33)."[225]

King goes on to state that:

> "…explicit costs [of assembling a workforce] include: (1) outlays for services performed by executive recruiters and (2) one-time recruitment costs paid to new hires, such as signing bonuses and relocation expenses."[226]

Human capital-related intangible assets are most often valued utilizing *Asset/Cost Approach-based valuation methods,* e.g., the *Replacement Cost Method.* Under this method, the cost to construct, at current prices, an intangible asset providing equal desirability and/or equivalent utility as the subject intangible asset is determined.

As illustrated by James Hitchner, CPA, ABV, ASA, the use of a cost approach to value certain human capital-related intangible assets is often the most applicable approach:

> "By acquiring fully trained personnel, the buyer avoided the expenditures associated with hiring and training equivalent personnel."[227]

Accordingly, the value of the human capital assembled workforce is represented by the assemblage cost avoided. Therefore, the cost approach is the most applicable valuation approach to value this asset.

Intellectual Property-Related Intangible Assets

Intangible assets that may be classified as intellectual property-related may include practice protocols, treatment plans or care mapping, procedure manuals and laboratory notebooks, technical and specialty research, patents and patent applications, copyrights, trade names, trade secrets, and royalty agreements.

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225 "Valuing an Assembled Workforce" By Elizabeth King, PhD, in "Valuation of Intangible Assets in Global Operations" Edited by Farok J. Contractor, Westport, CT: Quorum Books, 2001, p. 265.
226 "Valuation of Intangible Assets in Global Operations" Edited by Farok J. Contractor, Westport, CT: Quorum Books, 2001, p. 274.
227 "Financial Valuation: Applications and Models" By James R. Hitchner, 3rd ed., Hoboken, NJ: John Wiley & Sons, Inc., 2011, p 937.

Practice protocols and treatment plans, or care mapping, are standardized steps and an agreed upon processes to diagnose and manage a patient's care through the term of the medical need. These assets are usually developed over time based upon tested and researched patient outcome data, which may require significant investment. They may bring value to the subject enterprise, if continuously followed, recorded, and reported, in as much as they provide evidence of a higher quality or more cost-effective delivery of services, which gains competitive advantage in the marketplace. Procedure manuals outline the steps necessary to perform the various tasks required for the operation of the subject enterprise. When followed, procedure manuals can assure the continuous productivity and consistency of performance of the staff even when there is turnover or cross-training of staff.

Technical and specialty research are considered the *work-in-progress* of patents, copyrights, or other intangible assets. Patents acquired by healthcare professional practices may include specialized equipment and instruments that may lend to the increased care and beneficial quality outcomes of the practice's patients. Copyrights acquired by healthcare practices include proprietary software that can generate schedules and track patient care across multiple providers and disciplines, producing utilization and outcome reports based upon the treatment provided for use in negotiating reimbursement from managed care companies. Copyrights also may include books, patient information brochures, websites, and similar communication-related assets. Such software may increase productivity, patient care outcomes, and reimbursement at the practice. Trade names, such as the name of the subject enterprise, can bring recognition and brand loyalty to the subject enterprise. Royalty agreements, usually related to copyrights or patents owned, can provide a continuing revenue stream not subject to healthcare reimbursement risks.

Intellectual property that produces a distinct, separable stream of economic contribution, which may include patents, trademarks, and copyrights, and possibly, special "know-how" and trade secrets, can be valued utilizing Income Approach-based valuation methods.[228] Note that, while there has been significant growth in investor interest in healthcare-related intellectual property, there has also been growing investor concern that increased regulatory scrutiny of research and consulting arrangements between pharmaceutical and medical device firms and physicians may reduce healthcare-related intellectual property royalty rates. However, based on recent studies by researchers at Invotex, the average royalty rates in the healthcare industry have appeared to have actually increased (while the median rates have stayed the same).[229]

Intellectual property, where transactional data relating to direct market transactions of comparable property interests exists, can be valued utilizing a Market Approach-based valuation method or the related Relief from Royalty Method, which most often include patents, trademarks, and copyrights.

Asset/Cost Approach-based valuation methods typically do not consider the "profits from commercialization, investment risk, and earnings growth potential" of intellectual property, and

228 "Intellectual Property: Valuation, Exploitation, and Infringement Damages" By Gordon V. Smith and Russell L. Parr, Hoboken, NJ: John Wiley & Sons, Inc. 2005, p. 259.

229 "Has Governmental Anti-Kickback Statute Enforcement Kicked Back Royalty Rates?" By Edward A. Gold et al., Invotex, http://quickreadbuzz.com/2013/02/06/has-governmental-anti-kickback-statute-enforcement-kicked-back-royalty-rates, 2/6/2013 (Accessed 2/8/2013).

therefore may not provide a reliable indication of value for intellectual property.[230] When these methods are used, it is important to remember that intellectual property may be considered unique in that there are legal protections in place that prohibit the reproduction of the exact same intellectual property interest, which reproduction would be considered an infringement upon the existing legal protections. Therefore, Asset/Cost Approach-based valuation methods should be based on a replacement cost perspective, where the focus would be on the cost to replace the utility derived from the intellectual property, in contrast to reproducing the exact same intellectual property interest.[231]

The economic value generated by intellectual property may be considered separate and distinct from the economic value that the underlying intangible asset may possess. For example, books and websites may be considered a marketing-related intangible asset, which derives economic value from the enhanced image of the organization, while at the same time, the value derived from copyrights associated with those books and websites may be derived from the legal protection of the marketing-related intangible asset, comprised of those books and websites, from being exploited by another party without sufficient financial consideration being paid to their owner. Therefore, when valuing certain types of intangible assets the analysis should consider whether the net economic benefit to be derived from the intangible asset would persist without the legal protections afforded by intellectual property rights, which may be the highest and best use of the property interest. Note that, inherent in the definition of Fair Market Value is the concept that the hypothetical transaction is assumed to be closed with the typical legal protections in place to safeguard the transfer of ownership of the legal bundle of rights that define and encompass the transacted property or interest.

Additional information regarding specific aspects of various types of intellectual property in the United States can be found on the website for the United States Patent and Trademark Office, in the sections of the United States Code pertaining to intellectual property, and other significant sources included in the canon of professional literature related to intellectual property.

Locations and Operations-Related Intangible Assets

Intangible assets that may be classified as relating to locations and operations may include computerized management information systems that produce customized reports on the financial, operating, and patient outcome performance of the subject enterprise to aid in management decision-making and strategic planning. Favorable leases and the leasehold interests they generate can contribute to the value of a subject enterprise, depending upon the ability of the subject enterprise to sublease its leased space at a rate higher than it is paying. The subject enterprise, as a going concern, is a revenue-generating business enterprise and has the immediate ability to create economic benefit for the owner(s). The assemblage of assets may refer to the value of all of the practice's assets in place and working together to generate revenue. Historical documents, such as financial statements, patient charts, and productivity reports create a historical record to which future records can be compared for the purpose of management decision-making and strategic planning. Supplier contracts, typically those obtained through

230 "Intellectual Property: Valuation, Exploitation, and Infringement Damages" By Gordon V. Smith and Russell L. Parr, Hoboken, NJ: John Wiley & Sons, Inc. 2005, p. 262.

231 "Cost Approach of Health Care Entity Intangible Asset Valuation" By Robert F. Reilly, Journal of Health Care Finance, Vol. 39, No. 2, Winter 2012, p. 5.

group purchasing organizations, can provide the subject enterprise with pricing and service assurances that can provide increased accuracy and reliability for budgeting of the practice's operations and with a competitive cost advantage for producing and providing its services.

Operations-related intangible assets are most often valued utilizing the Replacement Cost Method, or an Income Approach-based valuation method. However, licensing arrangements related to the use of operations-related intangible assets could be valued using the Relief from Royalty Method if comparable licensing agreements can be found.[232]

Governance- or Legal Structure-Related Intangible Assets

Intangible assets that may be classified as relating to governance or legal structure may include organizational documents, income distribution plans, and noncompete covenants. Organizational documents, such as corporate by-laws, operating agreements, and shareholders agreements are a written record of the "rules" by which the organization operates and provides certain privileges and protections to the owner(s) or shareholder(s) on an individual, as well as a collective basis. Income distribution plans are the agreed upon formula(s) by which the owner(s) or shareholder(s), as well as other providers, are compensated. Noncompete covenants may provide some competitive protection to the subject enterprise from employees or colleagues who may, at their departure to a competitor, put the practice at risk of losing patients, referrals, or both.

Governance- and Legal Structure-related intangible assets, such as income distribution plans or corporate by-laws, may not provide a direct net economic benefit stream for use in an Income Approach-based valuation method. Further, because of the unique nature of many of these documents, there may be a lack of comparable transactions for use in a Market Approach-based valuation method. However, an Asset/Cost Approach-based valuation method, which allows for the quantification of the intangible asset through the measure of the economic inputs utilized to create the documents, e.g., outside professional services or internal labor, may be an appropriate technique to employ.[233]

Marketing and Business Development-Related Intangible Assets

Intangible assets that may be classified as marketing and business development may include advertising, franchise or licensing agreements, joint ventures or alliances, and market entrance barriers. Advertising (e.g., websites, print media ads, telephone numbers, and billboards) serves, much like trade names do, to create a desired image of the organization in an effort to create brand loyalty. Franchise or license agreements can enable an organization to access markets (either geographical or service) that may not have been feasible previously. In much the same way, joint ventures and alliances with other organizations may enable an organization to gain access to additional revenue streams. For example, a healthcare professional practice may partner with a local hospital to develop an ambulatory surgery center, whereby the healthcare practice

232 "Guide to Intangible Asset Valuation" By Robert F. Reilly and Robert P. Schweishs, New York, NY: American Institute of Certified Public Accountants, Inc., 2013, p. 275.

233 "Guide to Intangible Asset Valuation" By Robert F. Reilly, CPA, and Robert P. Schweishs, ASA, New York, NY: American Institute of Certified Public Accountants, Inc., 2013, p. 225.

gains access to the facility fees that, in the past, have been flowing solely to hospital, while it shares the capital responsibility for development of the center with the hospital.

The stringent requirements for licensing act to restrict the number of practicing professionals, which in turn acts as a limit to competition and sets barriers to participation in the profession. Credentialing restrictions and medical staff requirements of certain hospitals, ambulatory surgery centers, diagnostic imaging centers, and other outpatient facilities also may present a *barrier to entry* for providers in a given location or setting, which provides an element of value for the practice that is the *gatekeeper* for access to the credentialing. Established referral patterns and closed panel managed care contracts also can act as an entry barrier to practices within certain markets.[234] Depending on the specific circumstances, this can either add or detract from practice value. Additionally, allied health professionals and alternative medicine practitioners are increasingly being accepted and recognized by payors and patients as a legitimate alternative to traditional providers and services. A healthcare practice that has already overcome these potential barriers can provide added value to the subject enterprise.

Marketing- and business development-related intangible assets are often entwined with intellectual property-related intangible assets. For example, most forms of advertising provide important maintenance to a trade name or trademarked brand, therefore the advertising expense may serve as an economic expense burden applicable to the isolated income stream attributed to the intellectual property interest to determine the net economic benefit derived from ownership of the intellectual property interest.[235]

In the event that the subject marketing- and business development-related intangible asset does produce an isolated income stream above that produced by any associated intellectual property, an Income Approach-based valuation methods may be appropriate.

In the event that the market rate approximates the contractual rate for licensing-, marketing-, and business development-related intangible assets, and therefore does not reflect a variance to serves as a stream of future net economic benefit above that of the underlying intangible assets for use in an Income Approach-based valuation method, the use of an Asset/Cost Approach-based valuation method may be indicated in determining the value of utility available to a potential purchaser from the avoidance of cost related to developing the marketing- and business development-related intangible asset, which is already in-place.[236]

Regulatory- or Legal-Related Intangible Assets

Intangible assets that may be classified as relating to regulatory or legal matters may include facility licenses, medical licenses, permits, litigation awards and liquidated damages, certificates of need (CONs), Medicare certification, and other certifications and accreditations.

234 A closed panel is a managed care plan that contracts with only selected physicians on an exclusive basis for services, not allowing members to see physicians outside of the limited exclusive panel of providers for routine care. Examples include staff and group model Health Maintenance Organizations, but also apply to private medical groups that contract with an HMO.

235 "Intellectual Property: Valuation, Exploitation, and Infringement Damages" By Gordon V. Smith and Russell L. Parr, Hoboken, NJ: John Wiley & Sons, Inc. 2005, p. 261.

236 Ibid.

Most regulatory- or legal-related intangible assets are comprised of some form of market entrance barrier, which, by prohibiting or restricting the market, allow incumbents in the healthcare industry sector the opportunity to earn higher profits through less competition. Examples of market entrance barriers include:

(1) Supply side economies of scale;
(2) Demand side benefits of scale;
(3) Customer switching costs;
(4) Capital requirements;
(5) Incumbency advantages independent of size;
(6) Unequal access to distribution channels; and
(7) Restrictive government policy.[237]

Facility and medical licenses, as well as permits, are consistently under the review of regulatory and legal authorities. Just as they may be a barrier to entry, continued possession can be a competitive advantage. Litigation awards can be in the form of a tangible benefit (for example, cash) or an intangible benefit (for example, upholding a non-compete dispute). A CON, or similar program, is one in which government determines where, when, and how capital expenditures will be made for healthcare facilities and major equipment. A CON acts in a manner similar to a license or permit to allow a provider to offer certain services. Medicare certification of a facility or provider allows reimbursement by the government for patients subscribed to Medicare. The revenue stream of some healthcare organizations (that is, nursing homes, cardiology practices, and hospitals) are heavily dependent upon the revenue stream of Medicare patients; as a result, the ability to bill and receive reimbursement for services provided to these patients is of great value to these organizations. Attainment of other certifications and accreditations, such as the National Committee for Quality Assurance (NCQA), the Accreditation Association for Ambulatory Health Care (AAAHC), and the Joint Commission on Accreditation of Healthcare Organizations (The Joint Commission) can create an added image of quality or superior service for an organization. In addition, some third-party payors may require certain accreditations for participation on their panels.

Regulatory- and legal-related intangible assets, such as facility licenses or certifications, typically do not have established, transparent, liquid markets reporting transaction data for similar types of intangible assets. Therefore, the use of a Market Approach-based valuation method is typically not applicable for these assets. However, regulatory- and legal-related intangible assets that produce a direct, measurable amount of net economic benefit and can be valued utilizing Income Approach-based valuation methods.

In addition, Asset/Cost Approach-based valuation methods may be utilized to value regulatory- and legal-related intangible assets, in particular, those that do not produce a discernible direct economic benefit.

237 "On Competition" By Michael Porter, Updated and Expanded Edition, Boston, MA: Harvard Business School Publishing, 2008, p. 9-12.

Financial- or Revenue Stream-Related Intangible Assets

Intangible assets that may be classified as relating to financial or revenue streams may include office share arrangements, management services agreements, financing agreements, underwriting or private placement memoranda, financial derivatives, budgets, forecasts, or projections.

Office share arrangements, whereby a healthcare practice may share office space and staff with another healthcare practice, can enable a practice to see patients in different geographical areas on a periodic basis without bearing the entire overhead costs related to the "satellite" office. Management services agreements (MSAs) define the terms (for example, timeliness and cost) under which an outside organization provides certain management services (for example, accounting, billing, and managed care contracting) to a healthcare practice. In the event that the specific MSA provides a competitive financial advantage to the practice, it may hold economic value to the owner(s).

Financing agreements may prove to have value if the favorable terms (for example, amount of credit, interest rate, and amortization of loan) by which an organization may obtain additional capital to grow the organization, through additional working capital, capital purchases, acquisitions, and so forth. Financial derivatives (e.g. forwards, futures, options, or swaps) are defined as "…financial instrument[s] whose value depends on (or derives from) the values of other, more basic, underlying variables."[238] While derivatives can be used for *speculation* and *arbitrage* purposes, the most common uses by healthcare enterprises are as a *hedge* against the risk of uncertain input price movements for operational or transactional purposes, or for compensation of executives. Budgets, forecasts, and projections often serve as a road map for the financial performance of an organization. These budgets can assist management in making strategic decisions, such as equipment purchases and provider recruiting, which enhances the probability of future net economic benefit to the owner(s).

Financial- or revenue stream-related intangible assets may be valued using any of the three valuation approaches, with the specific approaches based on the reliability and availability of applicable data and information.

Technology-Related Intangible Assets

Intangible assets that may be classified as relating to technology may include computer software or network integration, technical or software documentation, and maintenance or support agreements. With the increase in productivity provided by office automation, computer software and network integration contribute to the efficient operations of an organization. The documentation of the computer software or network integration of an organization is a written record of these assets in use. The technology in an organization can create economic benefit and value to the organization only if it is working effectively to increase productivity, thereby decreasing costs and enhancing the net economic benefit of ownership. Maintenance and support relationships, typically through written agreements, provide an organization with assurances that the technology will consistently perform as expected and required during the term of the

238 "Options, Futures, and Other Derivatives" By John C. Hull, 8th ed., Boston, MA: Prentice Hall, 2012, p.1.

relationship or agreement. The existence and implementation of these agreements may prevent "downtime" with the resulting loss of productivity and related revenue opportunity costs.

For most technology-related intangible assets, it may be difficult to estimate the amount of net economic benefit directly attributable to the asset, making an Income Approach-based valuation method not applicable. In addition, similar to most other intangible assets, technology-related intangible assets usually do not have an established, liquid market where they can be bought and sold. However, the direct and indirect costs of maintenance and support agreements or technology-related documentation may be utilized in an Asset/Cost Approach-based valuation method, e.g., the Trended Historical Cost Method.[239]

Patient-Related Intangible Assets

Intangible personal property that can be considered patient-related intangible assets include: (1) custodial rights to patient medical charts and records and (2) patient recall lists.

The clinical information and data recorded and contained within the patient medical charts and records of a healthcare enterprise belong to the patient and *not* to the physician or the healthcare enterprise. Accordingly, the clinical information and data contained in the charts and records cannot be sold by the physician or the healthcare enterprise. However, the custodial rights to the structure, assemblage, and physicality of the data in the patient medical charts and records may constitute a distinct, separate and identifiable intangible asset that may have economic value. The economic benefit associated with the custodial rights to patient medical charts and records is derived from, and typically appraised by, quantifying the avoidance of the costs of assembling, maintaining, and storing the patient medical charts and records, which represents the costs that would be incurred by a potential purchaser, who would choose to *build* rather than to *buy* the custodial rights to the patient medical records.[240]

It should be noted that typically, paper medical records are less valuable than electronic medical records (EMR), since paper records are: costly to store and maintain; cumbersome; easily misplaced; and problematic as to their utility for meaningful decision analysis,[241] especially when chronic conditions require an analysis of diagnostic or other testing data across the continuum of care and time. For example, paper charts cannot be effectively "*searched and used to track, analyze, or chart*" voluminous clinical medical information; are more difficult to copy or reproduce; and, depending on the availability of space at the subject enterprise, may need to be stored off-site,[242] at a significant inconvenience and expense.

Patient recall lists can be considered an intangible personal property asset in the event that the following criteria are met:

239 "Intellectual Property: Valuation, Exploitation, and Infringement Damages" By Gordon V. Smith and Russell L. Parr, Hoboken, NJ: John Wiley & Sons, Inc. 2005, p. 261.
240 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 844.
241 "Benefits of EMR" Medical Systems Development Corporation, August 11, 2008, http://msdc.com/EMR_Benefits.htm (Accessed 1/29/2013).
242 Ibid.

(1) There is physical evidence that "a personal relationship between the customer and the vendor" exists, e.g., ability for two-way communication;
(2) There is physical evidence of an "identifiable income stream generated from the customer to the vendor"; and
(3) There is a justified rationale for an expected future life or duration to the income stream produced by the customer relationship, e.g., historical performance of the relationship.[243]

The valuation of the patient recall list should take into account the stage of the relationship, which is based on (1) "the degree of imminence of the customer purchase transaction"[244] and (2) "the degree of formality (or contractual rigor) of the customer purchase transaction."[245] While in a non-healthcare-related industry, e.g., stock brokerage, the purchase of customer recall lists is an accepted practice. In the healthcare industry, the purchase of patient recall lists may indicate an either direct or indirect payment for the volume or value of referrals, which is legally impermissible under both federal and state anti-kickback statutes.[246] One example of an arrangement where the purchase of a pharmacy's patient recall list was challenged as a payment for referrals was PharMerica, Inc.'s purchase of Hollins Manor I, LLC, which resulted in a settlement agreement between the company and the OIG for $5.9 million, as well as the imposition of a five year corporate integrity agreement (CIA).[247] Further, any purchase that could be construed as a violation of the professional and ethical codes and standards of the state, e.g., commercial bribery, may be subject to scrutiny under the state's anti-kickback statute as compensation for the "…purpose of improperly obtaining favorable treatment."[248]

Certain patient-related intangible assets can be valued utilizing Asset/Cost Approach-based valuation methods, e.g., custodial rights to patient medical charts and records, while others may be valued utilizing Income Approach-based valuation methods, e.g., patient recall lists. However, as is the case with most intangible assets, patient-related intangible assets typically do not have established, transparent, liquid markets reporting transaction data for similar types of intangible assets, invalidating the use of a Market Approach-based valuation method.

Goodwill

Once the identifiable and separately quantifiable intangible assets are valued, the residual amount of intangible asset value that remains is often referred to as *goodwill*. Note that goodwill is only one of the several intangible assets that may be found to exist in a healthcare enterprise, and should not be considered a "catch-all-moniker" for all of the enterprise's intangible assets in the aggregate.

It should be noted that most definitions of goodwill, e.g., *IRS Revenue Ruling 59-60*, *FASB ASC 350-20*, and established judicial opinions from valuation related case law, are only applicable to

243 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p.341-342.
244 Ibid, p.342.
245 "Valuing Intangible Assets" By Robert Reilly and Robert Schweishs, New York, NY: McGraw-Hill, 1999, p.342.
246 "Beyond the Anti-Kickback Statute: new Entities, New Theories in Healthcare Fraud Prosecution" By James G. Sheehan and Jesse A. Goldner, Journal of Health Law, Vol. 40, No. 2, Spring 2007, p. 174.
247 "Health Care Fraud and Abuse Control Program: Annual Report for FY 2005" Department of Health and Human Services and the Department of Justice, August 2006, p. 14.
248 "Beyond the Anti-Kickback Statute: new Entities, New Theories in Healthcare Fraud Prosecution" By James G. Sheehan and Jesse A. Goldner, Journal of Health Law, Vol. 40, No. 2, Spring 2007, p. 189.

specific situations such as purchase price allocation, marital dissolution, or bankruptcy proceedings.[249] For those valuation engagements that require the valuation of goodwill,[250] it should first be determined that intangible asset value exists in the subject enterprise and second, that some residual element of the value of the intangible assets is attributable to goodwill. Then, the next step is to identify, distinguish, disaggregate, and allocate the relevant portion of the existing goodwill to either: (1) professional/personal goodwill or (2) practice/commercial goodwill.[251]

Professional or Personal Goodwill

Professional or personal goodwill results from the charisma, education, knowledge, skill, board certification, and reputation of a specific physician practitioner. Professional or personal goodwill is generated by the physician's reputation and personal attributes that accrue to that individual physician. Because these attributes "go to the grave" with that specific individual physician and, therefore, cannot be sold, they have no economic value.

Professional or personal goodwill is not transferable. Even with long transition periods of introduction for a new acquiring physician owner, the charisma, skills, reputation, and personal attributes of the seller cannot, by definition, be transferred.

It is often stated that with assisted transfer (that is, extended transition period), a large portion of professional goodwill may be transferred. The transferability violates the definition of professional or personal goodwill. That portion of goodwill that may be transferred is defined as practice (or commercial) goodwill and is described in the following section.

Practice or Commercial Goodwill

Practice or commercial goodwill, as distinguished from professional or personal goodwill, is transferred frequently. Practice or commercial goodwill may be described as the unidentified, unspecified, residual attributes of the practice as an operating enterprise that contribute to the propensity of patients (and the revenue stream thereof) to return to the practice. Several significant factors should be considered when determining the existence and quantity of practice- or commercial goodwill-related value.

For example, it must be determined whether patients return to the practice because of attributes of the practice or because they are mandated to do so by their managed care insurance coverage. The practice's participation on a given managed care panel of providers may be subject to rapid and unexpected change. In that circumstance, the valuation analyst needs to decide whether the value of the practice that may be attributable to managed care organization relationships should

249 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 853.

250 There are at least two situations when a valuation engagement may require the allocation of personal from enterprise goodwill, i.e., marital dissolution and transactional tax planning. "How To Distinguish Personal Goodwill from Enterprise Goodwill, the Key Person Discount, and Noncompete Agreements" By Alina Niculita, Angelina Mckedy, and Kimberly Linebarger published in the book titled "BVR's Guide to Personal v. Enterprise Goodwill" Business Valuation Resources, 5th ed., 2012, p.2-17-2-18.

251 Note that further discussion of goodwill and the conflicting definitions used to define it, as it relates to valuation, is found in the *Conflicting Definitions of Intangible Assets Versus Goodwill* section below.

perhaps be considered as an identifiable, specific contract related asset, and separately valued, as opposed to being treated as practice or commercial goodwill.

CONFLICTING DEFINITIONS OF INTANGIBLE ASSETS VERSUS GOODWILL

As discussed in the *Goodwill* section above, goodwill is one type of intangible asset that may be considered in the valuation of professional practices. Goodwill is considered by some valuation professionals to be the residual amount of intangible asset value that may exist after the separately identified, separately distinguishable, and separately appraised elements of intangible value have been determined.

In June 2001, the FASB instituted Statement of Financial Accounting Standard (SFAS) Nos. 141 and 142. Prior to these standards, companies generally reported as goodwill the entire difference between the purchase price and the book value of identified tangible assets. Intangible assets typically were capitalized as part of the overall acquired goodwill, amortized over a finite period, and were *not* required to be separately identified. SFAS Nos. 141 and 142 have subsequently been replaced by ASC 805 and ASC 350, which require that goodwill be calculated as the overall purchase price minus the value of both tangible and identifiable intangible assets that have a finite useful life.[252] Additionally, traditional accounting allocation for valuing intangible assets, such as replacement costs or book values that fail to consider the market negotiation framework, may lead to indefensible measures of value.[253]

Accounting Versus Appraisal Definition

In the accounting world goodwill is most often viewed and characterized in a different manner than the valuation profession. For example, goodwill often is still referred to by accountants as the difference between the book value of assets on the healthcare entity's balance sheet and the amount for which the entity would sell.[254]

From an economic perspective, goodwill may appropriately be considered as the propensity of patients (and therefore the revenue stream) to return to the subject enterprise, which should be incremental to the net economic benefit derived from the other separately identifiable, distinguished, and appraised tangible and intangible assets of the subject enterprise. This concept is attributed to Lord Eldon, Lord Chancellor of Great Britain in the early nineteenth century, who stated: "[goodwill is] the probability that the old customers will resort to the old place."[255] Accordingly, goodwill should be considered as only one of many identifiable and quantifiable intangible assets related to healthcare service sector entities.

252 "ASC 805 & ASC 350 (formerly FASB 141 & FASB 142)" By Appraisal Economic, Inc, 2015, http://www.appraisaleconomics.com/asc-805-formerly-fasb-141/ (Accessed 3/11/2015).

253 "Grasping the Value of Intangible Assets" By Phillip A. Beutel and Bryan Ray, International Tax Journal, Vol. 30, No. 1, (Winter 2004), p. 36.

254 "Wiley GAAP 2003: Interpretation and Application of Generally Accepted Accounting Principles" By Patrick Delaney et al., Hoboken, NJ: John Wiley & Sons, Inc., 2002, p. 389.

255 "Hints to Young Valuers: A Practical Treatise on the Valuation of Property" By Anthony Richard Cragg and James Robert Vernam Marchant, 2nd ed., London, England: The Land Agents' Record, Ltd., 1901, p. 518.

CLASSIFICATION AND VALUATION OF HEALTHCARE SERVICES

During the 1990s, hospitals began employing primary care physicians and acquiring private practices in response to the emergence and perceived threat of managed care and the gatekeeping function. Recently, the growth of hospital employment of physicians has been accelerating. However, the focus is now on employing physician specialists as a key business strategy in order for hospitals to coordinate care, as well as for physician practices to alleviate the significant financial pressures they are encountering due to rising costs, reimbursement pressures, and the changing lifestyle choices of a newer generation of physicians who have different work life priorities.[256]

Concurrently, there has been parallel growth in the number of hospitals compensating physicians for their performance of hospital administrative functions (for example, medical directorships and administrative or executive management positions), as well as a growing trend toward compensating physicians for coverage and call agreements.[257]

Corresponding with the growing trend toward hospital employment of physicians, there has been an increase in regulatory scrutiny related to the legal permissibility of these arrangements under the federal fraud and abuse laws as they relate to transactions between healthcare providers. Similar to transactions involving, for example, the sale of a healthcare practice, physician compensation arrangements are scrutinized under both the valuation standard of FMV, as well as the related threshold of CR.[258]

FAIR MARKET VALUE: THE PRINCIPLE OF SUBSTITUTION AND THE PRINCIPLE OF UTILITY

The fundamental economic facts, circumstances, and economic behavior that will occur under certain conditions form the basis of the economic laws that dictate what would objectively be expected to prevail in certain specified economic situations. Within this concept, it can be said that the basis of all economic values derive from some form of economic usefulness, also termed utility.[259] Examples of utility include the benefits, satisfaction, or both derived from the use of properties and services, the use of money, the use and consumption of goods, and the use of intangibles for investment purposes.[260] As a result, it has been said that the principle of utility may

256 "A Guide to Physician Integration Models for Sustainable Success" American Hospital Association, September 2012, http://www.hpoe.org/Reports-HPOE/guide_to_physician_integration_models_for_sustainable_success.pdf (Accessed 5/19/2014), p 5-6, 9.

257 "The Managed Health Care Handbook" By Peter R. Kongstvedt, 3rd ed., Gaithersburg, MD: Aspens Publishers, Inc., 1996, p. 147-48, 158.

258 In those business transactions or arrangements where either threshold is not met, there is also the possibility for a finding of legal impermissibility under the Federal False Claims Act (FCA) if a healthcare provider knowingly submits a claim for reimbursement to a government entity for services under compensation arrangements which are deemed to be Stark and Anti-Kickback violations. Note that the definition of FMV in healthcare is set forth in the *The Standard of Value and the Universe of Typical Buyers* section above, as well as in *Definitions of Fair Market Value* of Chapter 3 in an *Era of Reform—The Four Pillars.* The definition of CR is set forth in *Definitions of Commercial Reasonableness* of Chapter 3 in an *Era of Reform—The Four Pillars.*

259 "Valuation of Property: A Treatise on the Appraisal of Property" By James C. Bonbright, New York and London: McGraw Hill Book Company, Inc., 1937, p. 16-17.

260 "Appraisal and Valuation: An Interdisciplinary Approach" By Richard Rickert, Washington, D.C.: American Society of Appraisers, 1987, Ch. 3, p. 6.

be stated as "[a]n object can have no value unless it has utility."[261] This concept, described previously in the *Value in Use* section above, is often referred to as *value-in-use.*

The dynamics concerning how economic value is created in this use and exchange continuum may be understood within the context of three additional basic principles related to the economic benefits to be derived from the right to control the subject services to be performed under the contractual arrangement. First, the principle of substitution posits that what normally sets the limit of what would be paid for property is the cost of an equally desirable substitute or one of equal utility. This principle is the basis for the decision regarding whether to *buy or build* a product or service. Second, the principle of investment limits posits that resources are not normally spent in pursuit of diminishing returns from property.[262] Third, and perhaps most important, the principle of anticipation posits that the economic benefits of ownership of, or the contractual rights to control, the subject services to be performed under the contractual agreement are created from the expectation of those benefits or rights to be derived in the future; therefore, all economic value is forward looking.[263]

Specifically, the economic value analysis for determining Fair Market Value should be focused on the economic benefits reasonably expected to be derived from the use or utility of the subject healthcare services, bounded by the cost of an equally desirable substitute, or one of equal utility, for each of the elements of economic benefit (or utility) to be derived from the right to control the healthcare services to be performed on behalf of the enterprise. It follows that a detailed examination of the attributes of the subject healthcare professional performing the services must be undertaken, with each element of the attributes of the subject healthcare professional first identified regarding their existence, and then classified regarding the specific factors and traits, often classified as the tasks, duties, responsibilities, and accountabilities (TDRAs) related to each attribute. This classification would exhibit the means by which they would reasonably be expected to provide utility to the contracting entity for the healthcare services to be performed going forward.

Intrinsic to the discussion of identifying and appropriately classifying each attribute by which the subject healthcare professional will provide utility to the subject healthcare enterprise is selecting the appropriate metric to be utilized in measuring the utility provided. Although such attributes as tasks and duties have discretely identifiable metrics that are more amenable to being quantified and measured (for example physician hour requirements and work relative value unit (wRVU) production), those attributes related to a healthcare professional's responsibility and accountability for ensuring his or her performance under the given contract are more complex and varied in their scope, thereby resulting in these attributes not being easily quantified, despite often being the attribute of utility that produces an equal or greater economic benefit for the organization. Accordingly, the value related to the utility attached to the subject healthcare professional's responsibilities and accountabilities will often provide greater economic benefit to the contracting organization vis-à-vis the risk and reward continuum and their relative risk in undertaking the given responsibility and accountability attached to the terms of the given contract.

261 "Principles of Economics" By F. W. Taussig, 2nd ed., Vol. 1, New York, NY: The MacMillan Company, 1917, pg. 120.
262 "Appraisal and Valuation: An Interdisciplinary Approach" By Richard Rickert, Washington, D.C.: American Society of Appraisers, 1987, Ch. 3, p. 24.
263 Ibid.

ROLE FOR THE VALUATION ANALYST

Typically, legal counsel does not provide a legal opinion regarding the Fair Market Value or Commercial Reasonableness of a compensation arrangement and will most often retain an independent valuation analyst to provide a certified valuation opinion regarding Fair Market Value, Commercial Reasonableness, or both of a compensation arrangement for a given employment or services agreement, including agreements for clinical professional services, medical directorships, and on-call coverage, as well as other administrative, management, and executive services.[264]

When developing the valuation analysis, the valuation analyst will need to obtain the requisite documents related to the proposed compensation arrangement(s), which typically include the items found in Exhibit 4-4.

Exhibit 4-4: Documents Required to Perform Valuation Service by Sector

Physician Clinical Services	
(1)	The proposed agreement(s) for clinical professional services (including a detailed description of all tasks, duties, responsibilities, and accountabilities related to the services to be performed)
(2)	The number of shifts per week and hour requirements per week anticipated under the proposed agreement
(3)	All agreements for other similar positions at the employer entity, including the scope of services to be performed under each of those agreements
(4)	The curriculum vitae for the physician performing the clinical services
(5)	Documentation regarding the board certification, qualifications, and tenure of those physicians performing the services under all similar agreements
(6)	Medical staff by-laws and roster
(7)	Documentation of historical clinical productivity, measured in wRVUs, gross charges, net revenue, or count by CPT code for the past two years
Physician On-Call Services	
(1)	The proposed agreement(s) for on-call services (stating whether call is restricted or unrestricted and including a detailed description of all tasks, duties, responsibilities, and accountabilities related to the services to be performed)
(2)	The number of shifts per week and on-call hour requirements per week anticipated under the proposed agreement
(3)	The number of times the existing (specialty specific) on-call physician was (a) paged and (b) required to be present at the employer for the past two years
(4)	All agreements for other similar positions at the employer entity, including the scope of services to be performed under each of those agreements
(5)	The curriculum vitae for the physician performing the on-call
(6)	Documentation regarding the board certification, qualifications, and tenure of those physicians performing on-call services under all similar agreements
(7)	Medical staff by-laws and roster
(8)	Documentation of historical clinical productivity, measured in wRVUs, gross charges, net revenue, or count by CPT code for the past two years

(continued)

264 "Fair Market Value: Analysis and Tools to Comply with Stark and Anti-kickback Rules" By Robert A. Wade and Marcie Rose Levine, Audioconference: HC Pro, Inc., Mar. 19, 2008, slide 49.

Physician Administrative, Management, and Executive Services	
(1)	The proposed agreement(s) for administrative, executive, and management services (including a detailed description of all tasks, duties, responsibilities, and accountabilities related to the services to be performed)
(2)	All agreements for other similar positions at the employer entity, including the scope of services to be performed under each of those agreements
(3)	Documentation regarding the board certification, qualifications, and tenure or those physicians performing the services under all similar medical directorship agreements
(4)	Documentation of offers made to previous (or other existing) physician executives
Physician Administrative, Management, and Executive Services *(continued)*	
(5)	Documentation regarding the medical staff's need for administrative direction (based on activities, hospital research efforts, community outreach programs, and so forth)
(6)	The employer's medical staff by-laws and roster
(7)	The employer's medical directorship agreement(s), listing the annual hour requirements and annual compensation paid to each medical director
(8)	Time sheet records and the time spent and work performed by the physician on each administrative function and service, subject to the position
(9)	The size of employer, number of patients, acuity levels of patients, and the specific needs related to the particular service line
(10)	The number of committees and meetings that require the physician executive's involvement, attendance, or both and the average frequency and duration of each committee and meeting
(11)	Documentation that the employer (at least) annually assesses the effectiveness of the physician executive in performing his or her tasks, duties, and responsibilities, as well as commercial reasonableness of the contract
(12)	Description of quality programs, including centers of excellence and "never event"[265] committees

The valuation professional's review of these documents, as well as results from interviews with employer management and physicians, will serve as the basis for supporting the development of the valuation analysis related to the scope of services to be performed, that is, whether the physician will be providing administrative services in addition to clinical services.

Valuation Methodology for Supporting Opinions of Fair Market Value and Commercial Reasonableness of Healthcare Services

Physician Clinical Services

The various types of compensation plans for clinical-related services may include, but are not limited to, combinations of the following elements:

(1) Base salary, i.e., equal compensation paid to each physician;
(2) Productivity-based compensation (e.g., cap compensation and a given productivity percentile by specialty);

265 'Never events' are errors in medical care that are clearly identifiable, preventable, and serious in their consequences for patients," thereby indicating a serious problem in the safety and credibility of the health care provider. Additionally, CMS indicated that such 'never events,' like surgery on the wrong body part or mismatched blood transfusion, cause serious injury or death to beneficiaries, and result in increased costs to the Medicare program to treat the consequences of the error." "Eliminating Serious, Preventable, and Costly Medical Errors—Never Events," Centers for Medicare & Medicaid Services, May, 18, 2006.

(3) Compensation based on a per wRVU method;
(4) Incentive bonus based on productivity;
(5) An annual stipend for performance of administrative services, e.g., medical directorships, departmental management, and oversight;
(6) Incentive payments based on achieving quality of patient and beneficial outcomes based on agreed upon measures and benchmarks;
(7) Incentive payments based on specified legally permissible gainsharing arrangements, e.g., achieving certain cost savings and efficiencies; and
(8) Incentive payments paid based on the contributions and economic inputs of the employed physician(s) to achieve specified enhancement of the performance of the enterprise, e.g., development of a *"Center of Excellence."*[266]

Note that productivity-based plans typically include compensation that is based on: (1) a percentage of collections; (2) a percentage of gross charges; or (3) a per wRVU basis. While compensation based on gross charges has the benefit of not being based on the patient payor mix, the employer's gross charges may not necessarily be aligned with collections, and the physician's compensation may fluctuate significantly depending on the employer's increase or decrease in gross charges.[267] However, if compensation is based on an employer's collections, there may be a high incentive for physicians to treat patients with higher paying payors in contrast to treating Medicaid or indigent patients,[268] which may result in a misalignment with the objectives and stated purpose of the organization. In those compensation arrangements where compensation is based on a per wRVU basis, there is the benefit of the compensation being based upon the physician's productivity, i.e., work effort, regardless of the employer's payor mix or collection rate.

In those circumstances where the compensation plan is based on a per wRVU basis, consideration should be given as to whether the amount of compensation per wRVU reflects an amount that is solely related to the production of wRVUs. The production of non-wRVU services may be present and desired by a potential purchaser, e.g., medical directorship services and/or profit from ASTC revenue streams; however, these activities are separate and distinct services from the production of wRVUs and, therefore, the remuneration for these non-wRVU producing activities should not be disguised as an increased wRVU compensation rate.

Similarly, when a compensation plan proposes paying above the indicated, most probable price set forth by applicable benchmark survey data (even after the homogenous badges of economic contribution comprising the subject services have been identified and separated from each other), an appropriate justification should be documented, supported, and explained. Recall that the mean or median compensation metric observed in a survey data population typically sets forth the most probable payment amount for the specific type of service. Those "special circumstances" which typically warrant paying above the most probable payment rate for the particular service may include: (1) the unique and accordingly scarce skill set of the particular provider; (2) additional tasks, duties, responsibilities, and accountabilities required of the subject provider above those of the typical providers in comparable positions, reported in the benchmark

266 "Fair Market Value: Analysis and Tools to Comply With Stark and Anti-kickback Rules," By Robert A. Wade and Marcie Rose Levine, Audio Conference, HC Pro, Inc., (March 19, 2008), slide 51-66.
267 Ibid, slide 57.
268 Ibid, slide 58.

survey data; (3) the quality of the wRVU generated by a particular provider is higher in relation to the wRVUs generated by the providers included in the benchmark survey data; (4) the provider produces a similar quality wRVU but at a lower cost per unit; or (5) other special circumstances regarding the wRVUs produced by a particular provider.

Regardless of the type of compensation plan being utilized, compensation for clinical-related services will vary based on: (1) the provider's specialty; (2) the method of valuing productivity, e.g., percentage of collections, percentage of gross charges, or per wRVU; (3) hourly rate (if applicable); and (4) full-time equivalency (FTE) status.

Once the requisite documents and information have been gathered and the proposed compensation arrangement has been specified, consideration of the most probable remuneration for the services provided should include an analysis of the pertinent value drivers, i.e., the underlying elements of clinical productivity.

Value Drivers of Clinical Productivity

The value of services rendered should consider the four provider specific drivers of clinical productivity, i.e.: (1) time; (2) efficiency; (3) volume; and (4) quality performance, which are utilized in the benchmarking process[269] either in comparison to internal sources or outside industry normative data, in developing the FMV analysis.

Time

The amount of time dedicated to clinical activity will work to establish the bounds of volume of clinical productivity. Based on the Principle of Substitution, a provider has a finite limitation on both the number of hours and the volume of clinical-related services per hour they can provide. Further, a growing emphasis is being placed on academic, administrative, executive, volunteer, and other non-clinical activities in measuring a provider's performance and compensating providers for the work performed.[270] Because time is a depleting resource, the amount of time contributed to these various other tasks directly impacts the amount of time available for clinical activities. Further, the Principle of Diminishing Marginal Utility of Income (a corollary of the Principle of Investment Limits) provides the conceptual framework that physicians and other clinical providers, as the sellers of services, will perceive a diminishing level of value for the units of time expended performing clinical-related services, beyond that horizon which separates the perceived utility derived from the financial gain of performing additional clinical productivity from the perceived utility to be gained from the time expended on other pursuits, e.g., family or leisure activities.

269 "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 114.

270 "The Effects of Consolidation on Physician Compensation: Expectations and Future Challenges," by Daniel K. Zismer and David A. Kaplan, in "Physician Compensation Arrangements," By Daniel K. Zismer, An Aspen Publication, 1999, pg. 6-8; "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 114-115.

Efficiency

The level of efficiency in providing clinical services will also contribute to a provider's level of productivity and, accordingly, their level of compensation, i.e., the amount of time spent performing clinical tasks is not the only factor in determining the total amount of clinical throughput - the volume produced per unit of time should also be taken into consideration.[271] Variances in the level of provider efficiency typically account for differences in total volume once adjustments for the incongruity introduced by non-clinical time worked, as well as for the variability introduced by less hours worked by part time providers, have been accounted for. The valuation analyst should also consider the implications of the degree/type of provider specialization, as well as the degree of difficulty and/or type of work that each specialty entails when comparing and contrasting the services performed by various providers.[272] In addition to *time*, the provider's level of experience may also have a positive or negative impact on their efficiency, which would impact the volume of clinical productivity produced, e.g., wRVUs.

Volume

The volume of clinical productivity possible may be limited by the time spent on non-clinical activities, in a manner similar to that of time and efficiency. The extent to which the volume of clinical production is thus limited shall be taken into consideration when calculating productivity. Also, as with efficiency, the specialization of the provider will likely have an impact on the volume of patient throughput, as more complex areas of practice will require more time and, therefore, may appear on their face less *efficient.*[273]

Quality

The fourth – and final – value driver of clinical productivity is the quality of care administered to a patient. Quality metrics are playing an increasingly important role in measuring a provider's performance for purposes of determining FMV compensation.[274] The rise in the importance of the quality metric as a value driver of clinical productivity is manifested in the movement towards value-based reimbursement (VBR). This new paradigm of healthcare value metrics, i.e., value equals cost plus quality, is a foundation of current healthcare reform efforts.

Consideration of Benefits as Compensation

Another requisite component of a compensation plan is the amount of benefits included within the total compensation arrangement. As set forth in the definitions of the Stark Law, any

271 "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 114-115.

272 "Fee-For-Service Models," by J. Gray Tuttle, in "Physician Compensation: Models for Aligning Financial Goals and Incentives," by Kenneth M. Hekman, Medical Group Management Association, 2000, p. 49-50; "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 114-115.

273 "The Broad Perspective—Physician Compensation Issues across Different Practice Settings," by Daniel K. Zismer, in "Physician Compensation Arrangements," By Daniel K. Zismer, An Aspen Publication, 1999, p. 20-21; "Measuring Physician Work and Effort," in "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 114-115.

274 "Pay for Performance: Quality- and Value- Based Reimbursement," by Norman (Chip) Harbaugh Jr., Pediatric Clinics of North America, Volume 56, Number 4, (2009), 997-998 ; "Physician Compensation Plans: State-of-the-Art Strategies," by Bruce A. Johnson, JD, MPA and Deborah Walker Keegan, PhD, FACMPE, Medical Group Management Association, 2006, p. 114-115.

remuneration, whether in cash or in kind, is considered to be compensation for the purpose of determining FMV and commercial reasonableness.[275]

Types of benefits that are often part of a compensation arrangement include: (1) contributions to retirement plans; (2) payment of automobile expenses; (3) compensation for continuing medical education; (4) reimbursement for business-related travel and entertainment; and (5) payment of malpractice insurance coverage. The valuation analyst should compare the level of benefits in the compensation package to those of applicable, normative benchmark industry survey data; if the amount of benefits to be provided is significantly above those reported by the benchmark surveys, an adjustment should be made to add the excess benefit amount as cash compensation being paid to the provider. Note that, in this event, the excess benefit amounts have the potential to cause the level of cash compensation to exceed either the threshold of FMV or Commercial Reasonableness. One often overlooked benefit that should be considered in the determination of FMV and Commercial Reasonableness of a compensation arrangement is the payment of not only malpractice insurance coverage by the purchaser of the subject services, but the agreement that would require the employer to be liable for prior claims from services rendered by the physician during the malpractice insurance premium period from previous employment, referred to as *prior acts coverage.*

Since the economic cost burden (i.e., the insurance premium) related to prior acts professional liability insurance coverage (commonly referred to *as nose coverage*) is most often incurred (paid) in a subsequent period from which the reimbursement for the provision of the given medical service is realized, there may be an economic revenue/expense mismatch between the premium cost and the reimbursement received for the services rendered. Note that the economic cost burden associated with malpractice claims that may be brought against a provider in the future for services rendered after his current employment has terminated is referred to as tail risk. Occurrence malpractice insurance coverage protects against tail risk; however, "claims made" policies only cover the provider from the risk of malpractice lawsuits during the coverage period.[276] Therefore, a provider with claims made insurance who becomes an employee of another provider may have liability risk from prior acts, which would require an additional nose coverage policy.

Since payment of prior acts insurance coverage by an outside party would relieve the provider from incurring the cost burden associated with protecting against the legal liability of malpractice claims from prior acts, it should be classified as an economic benefit accruing to the physician and, as such, should be included in the amount of total compensation received when determining whether the total consideration paid to the provider is within the range of FMV and is commercially reasonable. Differences between nose coverage and tail coverage are set forth below, in Table 4-3.

275 "Definitions" 42 C.F.R. § 411.351 (2011).

276 "Malpractice Insurance" American College of Physicians, 2015, http://www.acponline.org/residents_fellows/career_counseling/malpractice_insurance.htm (Accessed 3/19/2015).

Table 4-3: Tail/Nose Coverage

Coverage		Employment Period Related to Current Policy Coverage Assumes Liability Event Occurs During Current Coverage Period		
		Before Employment	During Employment	After Employment
Standard	Occurrence	N	Y	Y
	Claims Made	N	Y	N
Standard with Nose (Prior Acts)	Occurrence	Y	Y	Y
	Claims Made	Y	Y	N
Standard with Tail	Occurrence	N	Y	Y
	Claims Made	N	Y	Y
Standard with Nose and Tail	Occurrence	Y	Y	Y
	Claims Made	Y	Y	Y
			Symbols	
			Covered	Y
			Not Covered	N

After assessing the value drivers of clinical productivity, the proposed compensation arrangement should be compared to applicable, normative benchmark industry sources reflecting similar TDRAs in order to determine whether it meets the regulatory thresholds of FMV and commercial reasonableness. This *benchmarking analysis* should include the following steps to ensure the most relevant external benchmarking data is utilized for comparison purposes:

(1) Determination of the arrangement specific characteristics, including but not necessarily limited to:
   (a) Specialty/subspecialty of the provider;[277]
   (b) Applicable job training and education level of the provider, relevant to the position;
   (c) Amount of experience of the provider;
   (d) Site of service (e.g., hospital-based practice, office-based practice, etc.);
   (e) Geographic location where the subject services are to be provided;
   (f) Nature of the revenue stream that produces the income available for clinical-related services compensation (e.g., determination of whether ancillary services and technical component (ASTC) data is included/excluded in the subject services, determination of whether Non-Physician Provider data is included/excluded in the subject services, etc.);

277 "Fair Market Value: Analysis and Tools to Comply With Stark and Anti-kickback Rules," By Robert A. Wade and Marcie Rose Levine, Audio Conference, HC Pro, Inc., (March 19, 2008), slide 55.

(2) Establish the homogenous units of economic contribution to be used as the metric(s) of comparability, which may include the following:
    (a) Productivity components, e.g., charges, collections, RVU, etc.; and/or
    (b) Time components, e.g., annual, monthly, hourly, full-time equivalent, etc.;[278] and
(3) Development of the range of applicable, normative benchmark industry data, which should include measures within the range, (e.g., 10th percentile, 25th percentile, 75th percentile, 90th percentile, etc.), as well as measures of central tendency, (e.g., mean, median, etc.), and measures of dispersion, (e.g., standard deviation).[279] The range of normative benchmark industry data is typically compiled by taking a weighted average of the selected external benchmark data sources that report the specified metric(s) of comparability.[280] The percentage of consideration assigned to each data source utilized to compile the range of normative benchmark industry data should include contemplation of the following statistical and descriptive survey characteristics:
    (a) Size of the data population sample included in the external benchmark survey;
    (b) Dispersion of the data; it should be noted that a useful metric for comparing the relative dispersion between data sets for the purposes of determining an applicable weight of consideration in calculating a range of applicable, normative benchmark industry data, is the coefficient of variation (calculated as the sample set mean divided by the sample set standard deviation);
    (c) Geographic proximity in relation to the area in which the subject services will be provided; and
    (d) Other elements of comparability between the external benchmark data sources and the subject services (e.g., whether the external benchmark data source includes information specific to the specialty/subspecialty of the provider, date the external benchmark data was compiled in relation to the valuation as of date, etc.).

A listing of typical compensation surveys utilized for benchmarking *clinical-related services* compensation can be found below in Table 4-4.

Table 4-4: List of Selected Generally Accepted Surveys Utilized for Benchmarking Physician Clinical Compensation

Source Title	Source Publisher
All Health Care Salary Survey	Abbott, Langer Association
Healthcare Associations and Disciplines Salary Survey	Abbott Langer Association
Integrated Health Networks Compensation Survey	William M. Mercer, Inc.
Medical Group Compensation and Financial Survey	American Medical Group Association
Northwest Health Care Industry Salary Survey	Milliman
Physician Compensation and Production Survey	Medical Group Management Association
Physician Compensation and Productivity Survey Report	Sullivan Cotter and Associates, Inc.
Physician Compensation Report	Hay Group
Physician Compensation Survey	National Foundation for Trauma Care
Physician Placement Starting Salary Survey	Medical Group Management Association
Physician Salary Survey Report: Hospital-Based Group HMO Practice	John R. Zabka Associates
Physician Starting Salary Survey	The Health Care Group, Inc.
Survey of Health Care Clinical & Professional Personnel Compensation	Watson Wyatt Data Services

278 "Fair Market Value: Analysis and Tools to Comply With Stark and Anti-kickback Rules," By Robert A. Wade and Marcie Rose Levine, Audio Conference, HC Pro, Inc., (March 19, 2008), slide 55.
279 Ibid.
280 Ibid.

See *Clinical Benchmarking* for further discussion of some available clinical metrics and indicators for use in benchmarking analyses.

Physician On-Call Services

Hospitals typically utilize several time periods, including (1) hourly, (2) daily, (3) weekly, and (4) annually, as a metric in developing the basis of compensation for physicians for on-call services. Additionally, consideration must be given to whether the on-call services are restricted (that is, the physician is required to stay on hospital premises during call) or unrestricted (that is, the physician is not required to stay on hospital premises during call). It should be noted that most facilities that employ physicians for unrestricted on-call services require physicians to remain within fifteen to thirty minutes of hospital premises during call.

Call coverage benchmarking is similar to clinical benchmarking except for determination of the arrangement specific characteristics, including, but not necessarily limited to:

(1) Specialty/subspecialty of the provider;
(2) Applicable job training and education level of the provider, relevant to the position;
(3) Number of years of experience and reputation of the provider;
(4) Site of service (e.g., hospital emergency department, hospital obstetrical department, etc.); and
(5) Geographic location where the subject services are to be provided.

It should be noted that some compensation arrangements for on-call services allow the physician to be compensated for the on-call services provided, as well as to bill and collect for the professional clinical services provided while on-call. Other compensation arrangements for on-call services compensate the physician only for the on-call services component while the entity location bills and collects for the professional services. This may be particularly true of hospital-employed physicians (e.g., radiologists, anesthesiologists, pathologists, emergency room department providers, and hospitalists) who do not receive compensation based on a productivity formula. Because some industry benchmark survey data reports compensation levels based on the ability of the physician to bill and collect for their professional services while performing on-call services; adjustments may be necessary to the benchmark data when comparing on-call arrangements where the physician is not entitled to collect for the professional services provided.

Table 4-5: List of Selected Generally Accepted Surveys Utilized for Benchmarking Physician On-Call Compensation

Name	Publisher
Physician On-Call Pay Survey	Sullivan Cotter and Associates, Inc.
Medical Dictatorship and On-Call Compensation Survey	MGMA
Salary Profile Report	American Association of Physician Assistants
Survey of Exempt and Nonexempt On-Call Pay Practices: N.E. Fried & Associates	N.E. Fried & Associates

Physician Executive, Management, and Administrative Services

Although in the past, compensation for physician executive, management, and administrative services may have been based on the physician's historical clinical practice earnings, there appears to be increasing concern that compensating medical directors based on lost opportunity cost may not meet regulatory scrutiny under Stark and, rather, should be based on the actual services performed.[281] Although in most circumstances the opportunity cost of a physician provider of clinical services should not serve as the sole basis for determining physician executive compensation for performance of administrative services, it is nevertheless important for the consultant providing an opinion regarding the Fair Market Value and commercial reasonableness of a physician executive or medical director compensation arrangement to keep the *willing buyer-willing seller* requirement of the Fair Market Value standard in mind. Also, the valuation analyst should appropriately apply the economic concepts found in the principle of substitution and the principle of utility when performing the analysis.

The benchmarking of administrative and executive services is similar to that of clinical services, except that determination of the arrangement specific characteristics should include, but is not necessarily limited to:

(1) Applicable job training and education level of the professional/executive that is relevant to the position;
(2) Number of years of experience and reputation of the provider
(3) Size of the organization (e.g., revenue, number of employees, etc.);
(4) Site of service (e.g., hospital, office-based physician practice, hospital service line, ambulatory surgery center, etc.); and
(5) Geographic location where the subject services are to be provided.

Table 4-6: List of Selected Generally Accepted Surveys Utilized for Benchmarking Physician Executive, Management, and Administrative Services Compensation

Name	Publisher
Medical Group Compensation and Financial Survey	American Medical Group Association
Physician Compensation and Productivity Survey Report	Sullivan Cotter and Associates, Inc.
Physician Executive Compensation Survey	American College of Physician Executives
Physician Salary Survey Report: Hospital-Based Group HMO Practice	John R. Zabka Associates
Survey Report on Hospital and Healthcare Management Compensation	Watson Wyatt Data Services
Healthcare Executive Compensation Survey	Integrated Healthcare Strategies
Management Compensation Survey	Medical Group Management Association
Survey of Manager and Executive Compensation in Hospitals and Health Systems	Sullivan Cotter and Associates, Inc.
Executive Compensation Assessor	Economic Research Institute
Top Management and Executive Salary	Abbott Langer Association, Economic Research Institute, and Salaries Review
Executive Pay in the Biopharmaceutical Industry	Top 5 Data Services, Inc.

281 "Beyond Anti-Markup: 'Stand in the Shoes' and Other Practical Implications" By Michael W. Paddock, The American Bar Association Health Law Section and the ABA Center for Continuing Legal Education, February 6, 2008, http://www.crowell.com/documents/Stark-Phase-III_Anti-Markup-Rules_Mike-Paddock.pdf (Accessed 10/14/08), p. 22; "Health Care Fraud and Abuse: Practical Perspectives" By Linda A. Baumann, Washington, D.C.: The American Bar Association Health Law Section and The Bureau of National Affairs, Inc., 2002, p. 279; "The Managed Health Care Handbook" By Peter R. Kongstvedt, 3rd ed., Gaithersburg, MD: Aspens Publishers, Inc., 1996, p. 159.

Name	Publisher
Executive Pay in the Medical Device Industry	Top 5 Data Services, Inc.
Hospital Salary & Benefits Report	John R. Zabka Associates, Inc.
US IHN Health Networks Compensation Survey Suite	Mercer, LLC
Medical Directorship and On-Call Compensation Survey	Medical Group Management Association
Physician Compensation Report	Hay Group
Staff Salary Survey	The Health Care Group, Inc.
Integrated Health Networks Compensation Survey	William M. Mercer, Inc.
Compensation Survey for Not-for-Profit Organizations	Compensation Resources
U.S. Director Compensation and Board Practices Report	Matteo Tonello and Judit Torok, for T he Conference Board
Medical Director Survey	Integrated Healthcare Strategies
Director Compensation Report	National Association of Corporate Directors, with Pearl Meyer & Partners
Allied Health & Physician Compensation & Benefits Survey	Warren Surveys, a division of DeMarco & Associates
All Health Care Salary Survey	Abbott, Langer Association
Healthcare Associations and Disciplines Salary Survey	Abbott Langer Association
ERI Electronic Compensation Survey	Economic Research Institute
Northwest Health Care Executive Compensation Survey	MEDTECH
Medical Group Executive Compensation Survey	Sullivan Cotter and Associates, Inc.
Survey of Health Care Clinical & Professional Personnel Compensation	Watson Wyatt Data Services
Northwest Management and Professional Salary Survey	Milliman
Modern Healthcare Physician Compensation Review	Milliman
Executive Compensation Survey of Privately-Held Organizations	Compensation Resources

CONCLUSION

In financial valuation, no single approach, method, or combination thereof applies to every engagement or is universally correct. Each case must be considered as a unique exercise of informed judgment based upon careful analysis and supported by documented evidence and reasoned argument.

However, all the sophisticated arithmetic and brilliant theoretical constructs in the valuation world will not support a credible valuation if the appraiser does not have a thorough understanding of the market sector within which the subject enterprise exists and operates. In particular, it is critical to obtain and maintain appropriate documentation that the given compensation arrangement (whether it be for clinical services, administrative services, on-call services, or a combination of services) meets both the regulatory thresholds of Fair Market Value and Commercially Reasonableness in order to withstand increased scrutiny from the U.S. Office of Inspector General, Department of Justice, and the IRS. This is particularly important in the heightened and ever-changing regulatory environment in which healthcare enterprises and providers operate, with the potential severity of penalties, as well as related business consequences for entering into transactions and arrangements that may subsequently be found to be legally impermissible.

> A valuation is only credible if developed with a thorough understanding of the four pillars within the market sector of interest for that valuation.[282]

Healthcare entities and providers should work closely and in a timely manner with competent healthcare legal counsel and certified valuation professionals to ensure that the proposed transaction, whether related to an enterprise, assets, or services, meets regulatory thresholds. A certified opinion regarding whether the proposed transaction is both at Fair Market Value and Commercially Reasonable, prepared by an independent certified valuation professional, reviewed by legal counsel, and supported by adequate documentation, will significantly enhance the efforts of healthcare providers to establish a defensible position that their proposed transactional arrangement is in compliance.

Finally, a valuation analyst should remember to question everything and everyone, but he or she should be prepared to utilize reasoned and informed professional judgment to review the valuation report. In the end, when arriving at the opinion of value, remember to "[l]ove everyone, trust no one, and paddle your own canoe!"[283]

Key Sources

Key Source	Description	Citation	Website
"Valuing a Business: The Analysis and Appraisal of Closely Held Companies," 4th ed., by Shannon P. Pratt, Robert F. Reilly, & Robert P. Schweihs, McGraw-Hill, 2000.	Resource for business valuation and appraisal theory and application.	"Valuations for Estate and Gift Tax Purposes," *in* "Valuing a Business: The Analysis and Appraisal of Closely Held Companies," 4th ed., by Shannon P. Pratt, Robert F. Reilly, & Robert P. Schweihs, McGraw-Hill, 2000, p. 585.	n/a
"Standards of Value: Theory and Applications," by Jay E. Fishman, Shannon P. Pratt, & William J. Morrison, John Wiley & Sons, Inc., 2007	Resource for business valuation and appraisal theory and application.	"Standards of Value: Theory and Applications," by Jay E. Fishman, Shannon P. Pratt, & William J. Morrison, John Wiley & Sons, Inc., 2007, pp. 167, 181.	n/a
"RMA Annual Statement Studies," published by the Risk Management Association	Standard source covering practice financial statements with industry averages for a variety of industry categories.	"About RMA," Risk Management Association, rmahq.org, 2009, www.rmahq.org/RMA/AboutRMA/ (accessed December 1, 2009).	www.rmahq.org/RMA/ About RMA
"Financial Studies of the Small Business," published by Financial Research Associates	Standard source covering practice financial statements with industry averages for a variety of industry categories.	"About FRA," Financial Research Associates, LLC, frallc.com, 2009, www.frallc.com/about.aspx (Accessed December 1, 2009).	www.frallc.com/about.aspx

282 HCC Terminology.
283 HCC Terminology.

Key Source	Description	Citation	Website
"Statistics of Income: Partnership Source Book" and "Statistics of Income: Sole Proprietor Source Book" available through the Internal Revenue Service	Standard source covering practice financial statements with industry averages for a variety of industry categories.	"About Statistics of Income Sourcebooks," Internal Revenue Service, irs.gov, 2009, www.archives. gov/research/irs-data.html#psb (accessed December 1, 2009).	www.archives.gov/research/ irs-data.html#psb
Mergerstat Review	Annual series study of the premium paid by investors for controlling interest in publicly traded stock.	Published by FactSet Mergerstat, LLC. "FactSet Mergerstat Publications," FactSet Mergerstat, www.mergerstat. com/newsite/bookStore.asp (accessed November 4, 2009).	www.mergerstat.com/newsite bookStore.asp
Control Premium Study	Quarterly series study that compiles control premiums of publicly traded stocks by attempting to eliminate the possible distortion caused by speculation of a deal.	Compiled by Mergerstat/Shannon Pratt's BV Resources. "Mergerstat/ BVR Control Premium Study - Quantify Minority Discounts and Control Premiums," Business Valuation Market Data, www.bvmarketdata. com/defaulttextonly.asp?f= CPS%20Intro (accessed November 4, 2009).	www.bvmarketdata.com/default textonly. asp?f=CPS%20Intro
Business Valuation Resources (BVR)	"Every top business valuation firm depends on BVR for authoritative market data, continuing professional education, and expert opinion. Rely on BVR when your career depends on an unimpeachable business valuation. Our customers include business appraisers, certified public accountants, merger and acquisition professionals, business brokers, lawyers and judges, private equity and venture capitalists, owners, CFOs, and many others. Founded by Dr. Shannon Pratt, BVR's market databases and analysis have won in the courtroom—and the boardroom—for over a decade."	"About Business Valuation Resources," www.bvresources.com/ (accessed October 12, 2009).	www.bvresources.com

(continued)

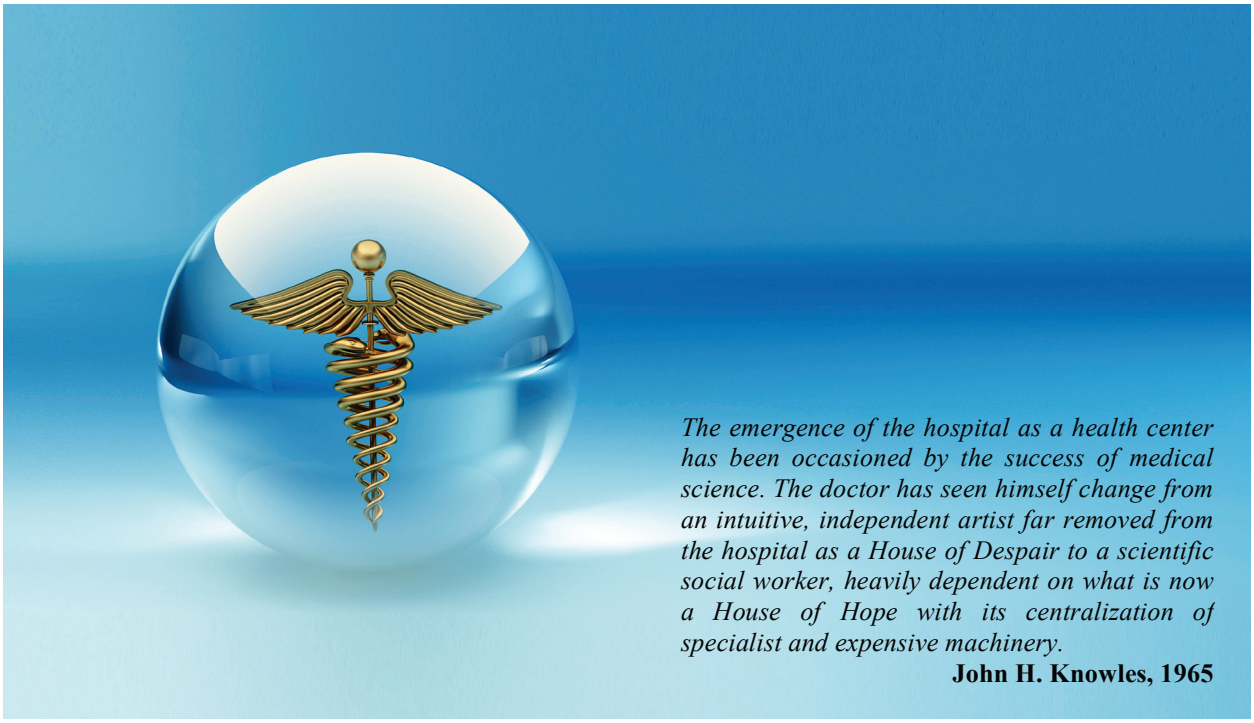
Key Source	Description	Citation	Website
American Institute of Certified Public Accountants (AICPA)	"The American Institute of Certified Public Accountants is the national, professional organization for all Certified Public Accountants. Its mission is to provide members with the resources, information, and leadership that enable them to provide valuable services in the highest professional manner to benefit the public as well as employers and clients. In fulfilling its mission, the AICPA works with state CPA organizations and gives priority to those areas where public reliance on CPA skills is most significant."	"AICPA Mission," www.aicpa.org/ About+the+AICPA/AICPA+Mission/ (accessed October 12, 2009).	www.aicpa.org
Institute of Business Appraisers (IBA)	"The Institute of Business Appraisers is the oldest professional society devoted solely to the appraisal of closely-held businesses. Established in 1978, the Institute is a pioneer in business appraisal education and professional accreditation."	"The Institute of Business Appraisers," www.go-iba.org/ (accessed October 12, 2009).	www.go-iba.org
The Canadian Institute of Chartered Business Valuation analysts (CICBV)	"Established in 1971, the Canadian Institute of Chartered Business Valuation analysts is nationally and internationally recognized as the pre-eminent business valuation organization in Canada. The Institute develops and promotes high professional standards governing a membership of more than 1,200 professionals who provide expertise in the areas of securities valuation, compliance, disputes, and corporate finance."	"Welcome to the CICBV," https://www.cicbv.ca/ (accessed October 12, 2009).	https://www.cicbv.ca/

Associations

Type of Association	Name	Description	Citation	Contact Information
National	National Association of Certified Valuation Analysts (NACVA)	"NACVA's Mission is to provide resources to members and to enhance their status, credentials, and esteem in the field of performing valuations, financial forensics, and other related advisory services. To further this purpose, NACVA will advance these services as an art and science, establish standards for membership in the Association, provide professional education and research, foster practice development, advance ethical and professional practices, enhance public awareness of the Association and its members, and promote working relationships with other professional organizations."	"The Association," National Association of Certified Valuation Analysts, 2008, www.nacva. com/PDF/association_br ochure.pdf (accessed October 12, 2009), p. 4.	National Association of Certified Valuation Analysts 1111 Brickyard Road, Suite 200 Salt Lake City, UT 84106 Phone: 801-486-0600 Fax: 801-486-7500 E-mail: nacva1@nacva. Com www.nacva.com
National	American Society of Appraisers (ASA)	"The American Society of Appraisers is an international organization of appraisal professionals and others interested in the appraisal profession. ASA is the oldest and only major appraisal organization representing all of the disciplines of appraisal specialists. The society originated in 1936 and incorporated in 1952. ASA is headquartered in the metropolitan Washington, D.C. area."	"American Society of Appraisers," www.appraisers. org/ ASAHome.aspx (Accessed October 12, 2009).	American Society of Appraisers 555 Herndon Parkway, Suite 125 Herndon, VA 20170 Phone: 800-272-8258 or 703-478-2228 Fax: 703-742-8471 www.appraisers.org

Chapter 5

Organizational Structure



The emergence of the hospital as a health center has been occasioned by the success of medical science. The doctor has seen himself change from an intuitive, independent artist far removed from the hospital as a House of Despair to a scientific social worker, heavily dependent on what is now a House of Hope with its centralization of specialist and expensive machinery.

John H. Knowles, 1965

KEY TERMS

Acute Care
Allopathic Medicine
Ambulatory Surgery Centers
Assisted Living Facilities
Boutique Medicine
C Corporations
Chronic Care
Civil Liability
Commercially Directed Health Plans
Community Orientation
Cost Containers
Direct-to-Consumer Medicine
Durable Medical Equipment
Emerging Healthcare Organization (EHO)
Facilities and Services
Facility Metrics
Financial Liability
Fully Integrated Medical Group (FIMG) Model
General Partnership
Group Model HMO
Health Maintenance Organization (HMO)
Horizontal Integration
Hospitalists
Incorporated Practices
Independent Diagnostic Testing Facilities
Independent Practice Association (IPA) Model
Integrated Delivery System (IDS) Model
Jumbo Employers
Large Employers
Limited Liability Corporations
Limited Liability Partnerships
Locum Tenens
Long Term Acute Care Hospitals
Managed Care Organization (MCO)
Management Services Organization (MSO) Model
Medicare Advantage
Network Model HMO
Osteopathic Manipulative Treatment (OMT)
Osteopathic Medicine
Physician Hospital Organization (PHO) Model
Physician Practice Management Companies
Point of Service (POS) Plans
Preferred Provider Organization (PPO)
Psychiatric Hospitals
Rehabilitative and Chronic Disease Hospitals
Research Facility
Resistors
S Corporations
Short Term Acute Care Hospitals
Skilled Nursing Facilities
Small Employers
Sole Proprietorship
Specialty Hospital
Staff Model HMO
Surgical Hospital
Tax Liability
Teaching Facility
True Integrators
Unincorporated Practices
Vertical Integration

Key Concept	Definition	Citation	Concept Mentioned on Page #
Sites of Healthcare Services	Fundamentally classified as office-based or hospital-based.	"A Guide to Consulting Services for Emerging Healthcare Organizations" by Robert James Cimasi, CBI, CBC, John Wiley and Sons, Inc., p. 24–25.	239–240
Average Length of Stay (ALOS)	Refers to the average number of days that patients spend in a hospital. Generally measured by dividing total number of patient days by number of admissions or discharges.	"4.5 Average Length of Stay in Hospitals" OECDLibrary, http://www.oecd-ilibrary.org/sites/health_glance-2011-en/04/05/index.html;jsessionid=5v0rd15cl175e.x-oecd-live-03?itemId=/content/chapter/health_glance-2011-33-en&_csp_=7437a3773df7eb771d0f1145cc7940bf (Accessed 4/7/15).	236
Inpatient Services	Typically involve overnight care	"AHA Hospital Statistics" American Hospital Association, 2008, p. 204.	237
Outpatient Services	Usually result in same-day discharge	"AHA Hospital Statistics" American Hospital Association, 2008, p. 207.	237
Requirements for Hospitals	(1) Must include at least six inpatient beds that are continuously available to nonrelated patients who stay, on average, longer than twenty-four hours,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(2) Must be built to ensure patient safety and health by maintaining a comfortable and sanitary environment despite potentially busy and overcrowded facilities,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(3) Must be governed by an authoritative body that assumes legal and moral responsibility for the hospital,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(4) Must appoint a chief executive that the governing body delegates to on matters of hospital operation and compliance with policy,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(5) Must employ an organized medical staff of licensed physicians,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(6) Must assign patients to members of the medical staff who are permitted to provide inpatient services in compliance with state laws and criteria,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(7) Must ensure that continuous nurse supervision and nursing services are afforded to patients,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(8) Must ensure the maintenance for continuous and complete medical records for all patients,	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	241
	(9) Must provide pharmacy services managed by a registered pharmacist, and	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	242
	(10) Must provide amenable food services to patients.	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A2.	242
Types of Hospitals	(1) general; (2) special; (3) rehabilitation and chronic disease; and (4) psychiatric	"AHA Guide Hospital Listing Requirements" American Hospital Association, 2006, p. A3.	242

Key Concept	Definition	Citation	Concept Mentioned on Page #
Scope of Long-Term Acute Care Hospitals (LTACHs)	LTACHs treat patients that "have more than one serious condition, but who may improve with time and care, and return home."	"What are Long-Term Care Hospitals?" Centers for Medicare & Medicaid Services, August 2014, https://www.medicare.gov/Pubs/pdf/11347.pdf (Accessed 4/6/15).	244
Benefits to Ambulatory Surgical Centers (ASCs)	(1) ASCs outnumber specialty hospitals and tend to be less capital-intensive. (2) Physicians are able to set and maintain their own schedules, which minimizes turnaround time and maximizes the number of procedures efficiently performed. (3) Patients like ASCs due to less institutional nature of ASCs. (4) Surgeons prefer ASCs because they are able to operate on more patients because it takes less time to prepare the operating room between surgeries.	"Specialty Versus Community Hospitals: What Role for Law?" By Sujit Choudhry, Nitessh K. Choudhry, and Troyen A. Brennan, Health Affairs, Web Exclusive, (August 9, 2005), p. 362; "Intellimarker: Ambulatory Surgical Centers Financial and Operational Benchmarking Study" Informed Healthcare Media, LLC: Dallas, TX, 2006, p. 7; "Ambulatory Surgical Centers Position Statement" American Academy of Orthopaedic Surgeons, http://www.aaos.org/about/papers/position/1161.asp (Accessed 4/6/15).	247–248
Characteristics of Business Structures Adopted by Healthcare Professional Practices	(1) ownership and tax structure (2) governance	"Buying, Selling, and Owning the Medical Practice: The Physician's Handbook to Ownership Options," by the American Medical Association, Coker Publishing LLC 1996, p. 41–43.	251
Three Kinds of Liability	(1) financial liability, (2) professional liability, and (3) tax liability	"Types of Business Entities" By Sandra McDuffy, MedicalMatters.org, 2010, http://www.medical matters.org/types-of-business.html (Accessed 4/7/15); "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/ 2005/1100/p42.pdf (Accessed 4/7/15), p. 42, 44.	251
Primary Catalyst for Physician Integration	May be to provide negotiating power for contracting with hospitals and MCOs.	"How to Survive in Independent Practice" By Elaine Pofeldt, ModernMedicine Network, August 7, 2014, http://medicaleconomics.modernmedicine.com/ medical-economics/content/tags/fighting-back/ how-survive-independent-practice?page=full (Accessed 4/7/15).	259
Types of Integration	(1) horizontal integration and (2) vertical integration	"The Value of Provider Integration" American Hospital Association, Trendwatch, March 2014, http://www.aha.org/content/14/14mar-provintegration.pdf (Accessed 4/7/15), p. 2.	258–259

OVERVIEW: TRENDS TOWARD A "CONTINUUM OF CARE" IN A GROWING AND GRAYING POPULATION

Healthcare spending has grown to approximately 17.4 percent of the U.S. gross domestic product (GDP) in 2013, from approximately 13.4 percent of the U.S. GDP, in 2000.[1] Overall, in 2013 the level of healthcare-related spending increased 3.6 percent from 2012 levels, representing the fifth consecutive year of relatively slow growth (3 percent – 4 percent per annum) in comparison to historical rates (which averaged approximately 7.27 percent between 2000 and 2008)[2], reflecting that healthcare related spending and GDP have increased at similar rates from 2010 – 2013.[3] However, according to some sources, the growth rate in healthcare related spending is expected to increase by six percent per year from 2015-2023, resulting in the portion of GDP comprised by healthcare spending to be 19 percent by 2023.[4]

While CMS actuaries have stopped measuring the impact of the most recent healthcare reform initiatives on healthcare spending levels, some pundits have suggested that implementation of certain elements of the healthcare reform initiatives (e.g., higher deductibles and greater cost sharing), as well as the downturn in business and economic cycles over the course of the *Great Recession* have both contributed to the lower growth rate in healthcare-related spending.[5]

The advent of healthcare reform initiatives has created a new paradigm for healthcare delivery, which promotes cost reduction and quality enhancements through a managed "*continuum of care*" approach, in contrast to the traditional hospital-centric model.[6]

As discussed briefly in Chapter 1 of *An Era of Reform—The Four Pillars*, managed care plans have emerged in response to the demand for healthcare cost containment which has been exacerbated by the the pressure from the unmet healthcare labor demands of the *growing* and *graying* U.S. population within the dominant fee-for-service system.[7] The demographic shift resulting from the aging of the *baby boomer* generation will lead to radical changes in the coming decades for the entire U.S. healthcare system.[8]

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1 "National Health Expenditures 2013 Highlights" Centers for Medicare & Medicaid, 2013, http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/highlights.pdf (Accessed 3/31/15); "NHE Summary including share of GDP, CY 1960-2013" Centers for Medicare & Medicaid Services, December 9, 2014, http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/NHEGDP13.zip (Accessed 4/14/15).

2 "NHE Summary including share of GDP, CY 1960-2013" Centers for Medicare & Medicaid Services, December 9, 2014, http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/NHEGDP13.zip (Accessed 4/14/15).

3 "National Health Expenditures 2013 Highlights" Centers for Medicare & Medicaid, 2013, http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/highlights.pdf (Accessed 3/31/15).

4 "Health Care Spending Forecast To Increase Modestly In Next Decade" By Mary Carey, Kaiser Health News, September 3, 2014, http://kaiserhealthnews.org/news/health-costs-inflation-cms-report/ (Accessed 3/31/15).

5 Ibid.

6 "A Guide to Consulting Services for Emerging Healthcare Organizations" By Robert J. Cimasi, New York, NY: John Wiley & Sons, Inc., 1999, p. 24; "The Continuum fo Care: Healthcare Reform's Effect" By Hudson Garrett, McKnight's, September 5, 2013, http://www.mcknights.com/the-continuum-of-care-healthcare-reforms-effect/article/310255/ (Accessed 4/7/15); "The IHI Triple Aim" Institute fo Healthcare Improvement, http://www.ihi.org/Engage/Initiatives/TripleAim/pages/default.aspx (Accessed 4/7/15).

7 "Health Care USA: Understanding its Organization and Delivery" By Harry A. Sultz and Kristina M. Young, 6th Ed., Boston, MA: Jones and Bartlett Publishers, 2009, p. 230-234.

8 "Plunkett's Health Care Industry Trends & Statistics 2008" By Jack W. Plunkett, Houston, TX: Plunkett Research, Ltd., 2007, p. 3.

The continued growth in demand for both inpatient and outpatient healthcare service will likely result from the expansion of patient populations with access to healthcare resulting from the various recently enacted healthcare reform initiatives. In addition, the reaction of the managed care industry to the reform initiatives, as well as the anticipated impact of demographic and manpower trends may necessitate changes to the integrated and diversified organizational structure of healthcare professional practices and in their diverse workforces in both the hospital-based and office-based settings.

CLASSIFICATION OF HEALTHCARE ORGANIZATIONS

Healthcare professional services may be classified as either office-based or hospital-based. Historically, the delineation between office-based and hospital-based practitioners was distinct. However, as the healthcare demand continues to grow, the site of service, in its traditional form, is experiencing a simultaneous transformation.[9] Healthcare organizations have become increasingly diverse and can be categorized through four differentiating criteria: (1) community orientation; (2) facility metrics; (3) facilities and services; and (4) organizational structure.[10] The diversity within the healthcare industry can be attributed to the various sub-classifications within these criteria.

ORGANIZATIONAL STRUCTURE

The focus of the chapter will be the distinguishing characteristics of a healthcare practice's organizational structure. These characteristics include:

(1) the sites at which the healthcare services are provided;
(2) the types of organizational governance employed by the practice;
(3) the business structures adopted by practices; and
(4) the organizational impact of the emerging health organizations (EHOs) that have been driven largely by insurance products, managed care contracts, and healthcare affiliations.[11]

However, it is vital to recognize that the all four criteria used to classify healthcare organizations (including community orientation, facility metrics, and facilities and services) contribute tremendously to the final organizational structure of a practice. These criteria are discussed within the following sections and the relationship of all four criteria is depicted in Figure 5-1, below.[12]

9 "Health Care USA: Understanding its Organization and Delivery" By Harry A. Sultz and Kristina M. Young, 6th Ed., Boston, MA: Jones and Bartlett Publishers, 2009, p. 75, 103, 121-124.
10 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 226-31.
11 "Capital Survey of Emerging Healthcare Organizations" Integrated Healthcare Report, Medical Group Management Association, Ziegler Securities, 1996, p. 1; "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6 (November/December 2007) p. 1590, 1593.
12 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 226-31.

COMMUNITY ORIENTATION

The *community orientation* of a healthcare organization is comprised of the healthcare enterprise's mission statement, the health status indicators of the community, and the selected methods of self-assessment for the healthcare enterprise.[13] A careful review of a practice's community orientation will reveal whether a practice functions as a *research facility*, a *teaching facility*, or both.[14] A facility's organizational structure is directly related to these practice attributes as they are determinant in the *function* of the enterprise from which springs naturally the *form* of the enterprise. Details regarding the methods of self-assessment for healthcare enterprises, specifically hospital outcomes research and benchmarking techniques, are addressed at greater length in Chapters 1 and 2 of *Consulting Services*. Also, these issues are touched upon in the development of physician compensation and income distribution plans as discussed in Chapter 3 of *Consulting Services*.

FACILITY METRICS

A healthcare organization can utilize any of several quantifiable *facility metrics* for clinical, operational, and financial benchmarking, including (1) the number beds in the facility, (2) utilization of assets, (3) financial performance, and (4) staffing utilization.[15] These characteristics affect the dynamic between the clinical and business aspects of a healthcare enterprise and will become even more important as healthcare reform and the ageing of the U.S. population continues to advance. Additionally, the selection of facility metrics is directly related to a facility's organizational structure.

A detailed discussion of each provider type, including key practice considerations and trends across and between the workforce sectors, can be found in Chapter 7: *Physician Practices*; Chapter 8: *Mid-Level Provider Professional Practices*; Chapter 9: *Technicians and Paraprofessionals*; Chapter 10: *Allied Health Professionals*; and Chapter 11: *Alternative Medicine Practices*.

FACILITIES AND SERVICES

The scope of a healthcare practice depends on the types of *services* that can be supported by its *facilities*. These services generally are determined by the specialty area of the practice. To some extent, the characteristics of a healthcare organization's specialty are determinative of the infrastructure it requires. A general overview of healthcare specialization as it relates to a facility's organizational structure will be provided briefly in this chapter, but for more detailed specialty information pertinent to each provider specialty type, see Chapter 7: *Physician Practices*; Chapter 8: *Mid-Level Provider Professional Practices*; Chapter 9: *Technicians and Paraprofessionals*; Chapter 10: *Allied Health Professionals*; and Chapter 11: *Alternative Medicine Practices*.

13 Ibid, p. 230-31.
14 Ibid, p. 230-31.
15 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 231.

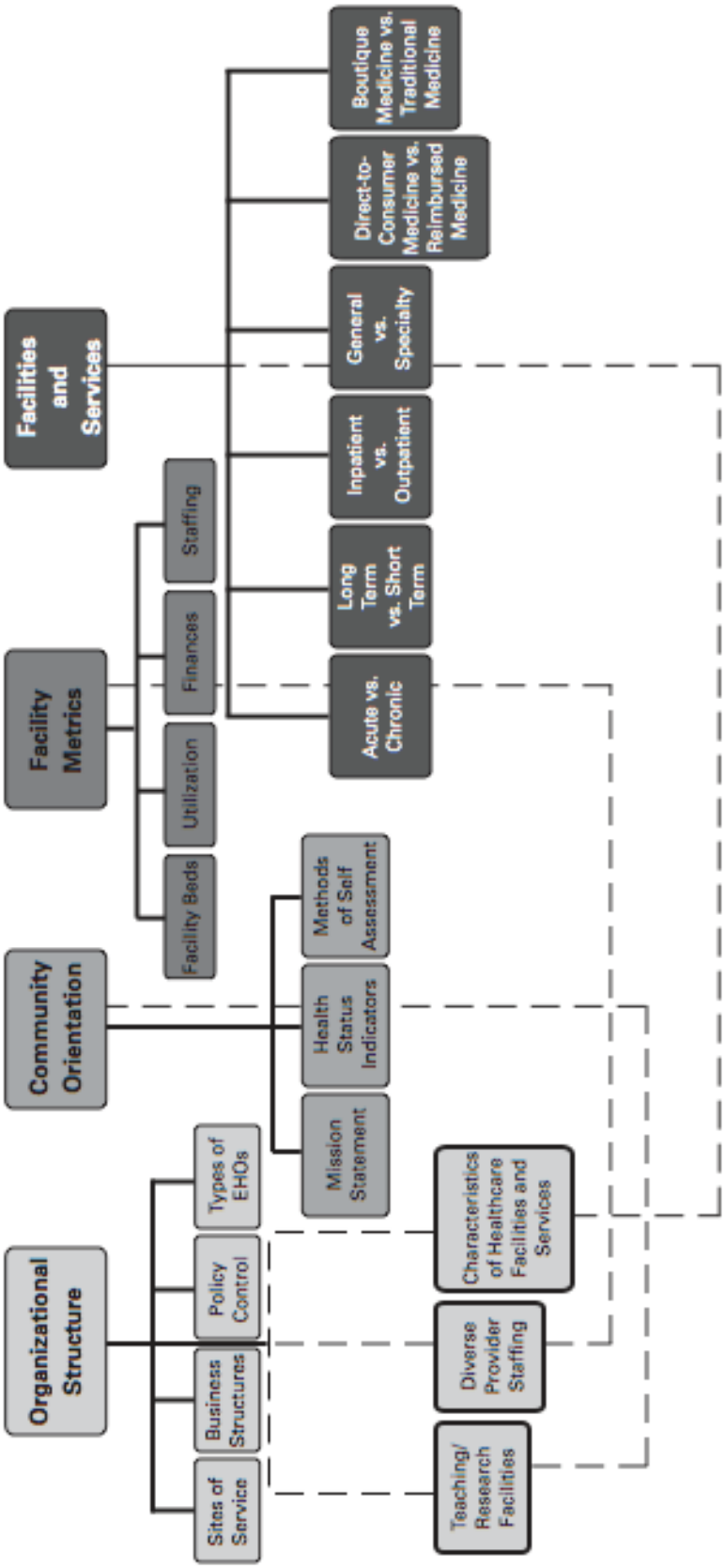


Figure 5-1: Classification of Healthcare Organizations

Acute Care Versus Chronic Care

Health conditions may be characterized as either acute or chronic depending upon their expected duration. A facility, and the organization structure required to support it, may focus on providing diagnostic and therapeutic services for relatively short periods of time, often stemming from brief or unexpected (*acute*) illnesses and injuries or for long-lasting or recurrent (*chronic*) illnesses and diseases.[16] Although the demarcation between acute and chronic settings may be blurred by departments within a single facility which specialize in the provision both acute and chronic care,[17] typically healthcare practices will tend to focus their attention on one or the other.

Short-Term Versus Long-Term Care

The average length of stay (ALOS) at any healthcare facility is related to the conditions that the facility treats. Acute care facilities can provide both short-term and long-term care; long-term acute care being defined as an ALOS of twenty-five days or more.[18] Long-term care facilities, on the other hand, treat chronic conditions generally have an ALOS of thirty or more days.[19] However, the correlation between the duration of an illness and the duration of stay is not always without exception.

Patients are no longer limited to a particular type of facility based upon the duration of their condition. Developments in medical technologies and clinical modalities have broadened the scope of services that short-term care facilities are capable of providing.[20] Procedures that once required significantly longer ALOSs have become commonplace in short-term care facilities.[21] Additionally, chronic conditions that historically required long-term care may now be managed in alternative settings with less extensive services, such as healthcare practices.[22]

However, enrollment in long-term care facilities has increased as a result of increases to intensive chronic disorders resulting from the aging U.S. population.[23] Demand for care in assisted living facilities and skilled nursing facilities (SNF) has grown not only because of the growth of chronic conditions, but also in an effort to reduce the incidence of acute conditions among the elderly and to assist in reducing their often significant associated expenses.[24]

16 "Acute vs. Chronic Conditions" MedlinePlus, May 30, 2013, http://www.nlm.nih.gov/medlineplus/ency/imagepages/18126.htm (Accessed 4/7/15).
17 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 225.
18 Ibid, p. 199.
19 Ibid, p. 205.
20 "Outpatient Outlook" By Kara Olsen, HealthLeaders Media, 2015, http://www.healthleadersmedia.com/print/MAG-86466/Outpatient-Outlook (Accessed 3/31/2015).
21 "National Hospital Ambulatory Medical Care Survey: 2006 Outpatient Department Summary" National Health Statistics Reports, Vol. 4 (August 6, 2008) p. 2, 3.
22 See generally "Plunkett's Health Care Industry Trends & Statistics 2008" By Jack W. Plunkett, Houston, TX: Plunkett Research, Ltd., 2007.
23 "Health, United States, 2008 With Special Feature on the Health of Young Adults" National Center for Disease Statistics, Department of Health and Human Services, March 2009, http://www.cdc.gov/nchs/data/hus/hus08.pdf#120 (Accessed 09/11/09) p. 407-408.
24 "Selected Long-Term Care Statistics" Family Caregiving Alliance, http://www.caregiver.org/caregiver/jsp/content_node.jsp?nodeid=440 (Accessed 9/25/09).

Inpatient Care Versus Outpatient Care

Inpatient care typically involves overnight patient stays; outpatient care usually results in same-day discharge.[25] As part of the most recent healthcare reform initiatives, a physician must expect that a patient will be in the hospital for *two midnights* in order to be classified as an inpatient stay, otherwise the patient visit must billed for as an outpatient service, which typically have lower reimbursement rates.[26] As mentioned in Chapter 1 of *An Era of Reform—The Four Pillars*, advances in technology paired with heightened demand for healthcare services has resulted in increased utilization of both inpatient and outpatient services of various kinds.

General Care Versus Specialty Care

Healthcare facilities can provide an array of general services (often mandated by state and federal regulation), or it can provide an array of highly specialized services in a focused area of expertise.[27] General medical or surgical care facilities provide acute care to patients in medical and surgical units under physician ordinance and nursing supervision.[28] Specialty and surgical services have also been provided by practitioners in highly specialized settings, such as specialty hospitals and ambulatory surgery centers.[29]

Direct-to-Consumer Medicine Versus Reimbursed Medicine

Direct-to-consumer medicine is defined in this *Guide* as medical services that are driven largely by consumer demand. Aesthetic procedures, laser hair removal, anti-aging procedures, and LASIK eye surgery are examples of direct-to-consumer medical services.[30] Because most direct-to-consumer procedures are not covered by private or governmental insurance,[31] demand for these services is sensitive to the cultural acceptance of the procedures and the discretionary income levels of the patients making these procedures subject to risk arising from the movements of the business cycle, as well as the capriciousness of social esteem.

Direct-to-consumer medical procedures continue to increase in the United States, both in terms of the procedures available and the volumes at which they are performed. For example, in 2014, approximately 10.6 million surgical and nonsurgical cosmetic procedures were performed in the United States, in comparison to approximately 1.7 million surgical and nonsurgical cosmetic procedures performed in 1997, which represents a compound annual growth rate of

25 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 204, 207.

26 "Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Fiscal Year 2014 Rates; Quality Reporting Requirements for Specific Providers; Hospital Conditions of Participation; Payment Policies Related to Patient Status" Federal Register Vol. 78, No. 160 (August 19, 2013) p. 50506; "The Two-Midnight Rule" By Cassidy A., Robert Wood Johnson Foundation, January 22, 2015, http://www.rwjf.org/en/library/research/2015/01/the-two-midnight-rule.html (Accessed 4/6/15).

27 "Trendwatch: Physician Ownership and Self-Referral in Hospitals: Research on Negative Effects Grows" American Hospital Association, April 2008, http://www.aha.org/aha/trendwatch/2008/twapr2008selfreferral.pdf (Accessed 08/26/2009).

28 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 203.

29 "Health Care USA: Understanding its Organization and Delivery" By Harry A. Sultz and Kristina M. Young, 6th Ed., Boston, MA: Jones and Bartlett Publishers, 2009, p. 231.

30 "2008 Cosmetic Surgery National Data Bank Statistics" The American Society for Aesthetic Plastic Surgery, 2009, http://www.surgery.org/sites/ default/files/2008stats.pdf (Accessed 10/02/09); "Lasik Frequently Asked Questions" New Vision Lasik, 2009, http://www.lasik-eye-surgery.info/ questions.html (Accessed 09/28/2009).

31 "Cosmetic Procedures" American Society of Plastic Surgeons, 2015, http://www.plasticsurgery.org/cosmetic-procedures.html (Accessed 4/6/15); "Clinical Policy Bulletin: Cosmetic Surgery" Aetna, http://www.aetna.com/cpb/medical/data/1_99/0031.html (Accessed 4/6/15).

approximately 11.5 percent.[32] These trends suggest rapid growth in demand for cosmetic procedures, which, in turn, may translate into an increased demand for physician, as well as nonphysician, providers of these services.[33] Plastic and reconstructive surgery, ophthalmology, and dermatology, along with other services within the direct to consumer market will be discussed in detail in respective sections of Chapter 7: *Physician Practices*.

Boutique Medicine Versus Traditional Medicine

Boutique medicine, also known as *concierge medicine*, is the delivery of care to a limited number of patients who pay an annual retainer fee directly to the healthcare enterprise.[34] Boutique medicine was developed, in part, in response to the dissatisfaction with Managed Care Organizations in the mid-1990s.[35] Managed care contracts "[c]ause much frustration for [physicians] as they attempt to deliver competent care to their growing number of patients, counteract rising financial costs, preserve personal and family time, and cope with legal constraints and malpractice threats that are common with managed care."[36] Boutique medicine delivers the primary concepts of "quality and personalized care, a reduced patient base that ensures greater access to service, and enhanced continuity of individual care."[37]

> The concept of boutique medicine was developed in Seattle, Washington, in the mid-1990s.
>
> ***Anthony J. Linz, Paul F. Haas, L. Fleming Fallon, and Richard J. Metz, November 2005.***

> Boutique medicine practices were formed and entered into due to dissatisfaction with managed care organizations.
>
> ***Jennifer Russano, 2005.***

There are three basic reimbursement models used to collect payment for services rendered under a boutique medicine mode. In the first model, physicians choose not to contract with a health plan, and therefore collection of payment is due immediately at the time of service or is collected over an extended period of time using an installment plan.[38]

32 "2014 Cosmetic Surgery National Data Bank Statistics" The American Society for Aesthetic Plastic Surgery, 2014, http://www.surgery.org/media/statistics (Accessed 3/31/2015) p. 4.
33 "2014 Cosmetic Surgery National Data Bank Statistics" The American Society for Aesthetic Plastic Surgery, 2014, http://www.surgery.org/media/statistics (Accessed 3/31/2015) p. 4.
34 "Retainer Practices Discussion Paper" American Academy of Family Physicians, http://www.aafp. org/online/en/home/practicemgt/specialtopics/ designs/retainer.html (Accessed 8/3/09) p. 1.
35 "Impact of Concierge Care on Healthcare and Clinical Practice" By Anthony J. Linz et al., Journal of the American Osteopathic Association, Vol. 105, No. 11 (November 2005) p. 515; "Is Boutique Medicine a New Threat to American Health Care or a Logical Way of Revitalizing the Doctor-Patient Relationship?" By Jennifer Russano, Journal of Law and Policy, Vol. 17 (2005) http://law.wustl.edu/Journal/17/p313%20Russano%20book%20pages.pdf (Accessed 08/04/09) p. 315, 324.
36 "Impact of Concierge Care on Healthcare and Clinical Practice" By Anthony J. Linz et al., Journal of the American Osteopathic Association, Vol. 105, No. 11 (November 2005) p. 516.
37 Ibid, p. 515.
38 "Retainer Practices Discussion Paper" American Academy of Family Physicians, http://www.aafp. org/online/en/home/practicemgt/specialtopics/ designs/retainer.html (Accessed 8/3/09) p. 1.

The second reimbursement model employed by boutique medicine enterprises is a blended model in which physicians contract with health plans to decrease their retainer fees with the health plan underwriting coverage for expensive treatments, hospitalizations, or both.[39]

The third and newest model is a blended retainer and fee-for-service model by which access can be obtained through a fee-for-service or cash-based *a la carte* model by patients unwilling or unable to pay an annual retainer fee.[40]

Services provided by boutique medicine practices have yet to be proven to provide an increase in the quality of care received by a patient.[41] However, boutique medicine does allow for same-day appointment availability, longer physician-patient interaction times, and even home visits, benefits that are unavailable to patients of traditional medicine practices.[42] Additionally, boutique medicine can also provide "*health and lifestyle improvement*" services, placing emphasis on prevention techniques, cooperative care plans, and complete physical examinations.[43] Patients enjoy "unlimited access to [their] physician anytime day or night, immediate access appointments, research on complex or rare diseases, coordination of care with specialists, guidance through a hospitalization, complex executive physicals, and other amenities designed to appeal to a wealthy clientele."[44] Additionally, physicians enjoy a decreased patient volume which leads to an increased amount of time available to be spent with individual patients and a decreased administrative paperwork burden.[45] For more information about boutique practices, see Chapters 2 and 4 of *An Era of Reform—The Four Pillars*.

> Boutique medicine allows physicians to drastically cut their patient load in an attempt to provide more individualized quality care to patients. In fact, "instead of a typical panel of 2,000 to 3,000 patients, such physicians may care for perhaps 400 patients per physician."[46]

HEALTHCARE PROFESSIONAL PRACTICE SITES OF SERVICE

As mentioned in *Classification of Healthcare Organizations***,** the sites of healthcare services historically have been classified as either hospital-based or office-based (see Figure 5-2,

39 "Is Boutique Medicine a New Threat to American Health Care or a Logical Way of Revitalizing the Doctor-Patient Relationship?" By Jennifer Russano, Journal of Law and Policy, Vol. 17 (2005) http://law.wustl.edu/Journal/17/p313%20Russano%20book%20pages.pdf (Accessed 08/04/09) p. 323; "Retainer Practices Discussion Paper" American Academy of Family Physicians, http://www.aafp. org/online/en/home/practicemgt/ specialtopics/designs/retainer.html (Accessed 8/3/09) p. 1.

40 "Retainer Practices Discussion Paper" American Academy of Family Physicians, http://www.aafp. org/online/en/home/practicemgt/ specialtopics/ designs/retainer.html (Accessed 8/3/09) p. 2.

41 "Do Boutiques Deliver Better Care" By Scott MacStravic, HealthLeaders: Information to Lead, February 9, 2004, http://www.healthleaders.com/news/ print.php?contentid=52125 (Accessed 08/04/09).

42 Ibid.

43 Ibid.

44 "The Elephant in the Room: Why Does Nobody Talk About the Real Problems with Healthcare Today" By Nancy Wilson Ashbach, Family Practice Management, Vol. 9, No. 9 (October 2002) http:/www.aafp. org/fpm/20021000/15thee.html (Accessed 05/24/10) p. 12.

45 Ibid.

46 Ibid.

below).[47] While these sites of service have remained, the provision of healthcare services has begun to transcend traditional boundaries regarding *where* services are provided. Services customarily part of hospital-based care now may be provided in a specialty or outpatient office setting.[48] Additionally, practitioners have become increasingly versatile in certain areas while increasingly exclusive and limited in others. More versatile services and practitioners have weakened the partition distinguishing the office-based market from the hospital-based market. [49] In addition, the emergence of *retail clinics* providing many primary care services has also redefined the traditional notion of a healthcare *site of service*.

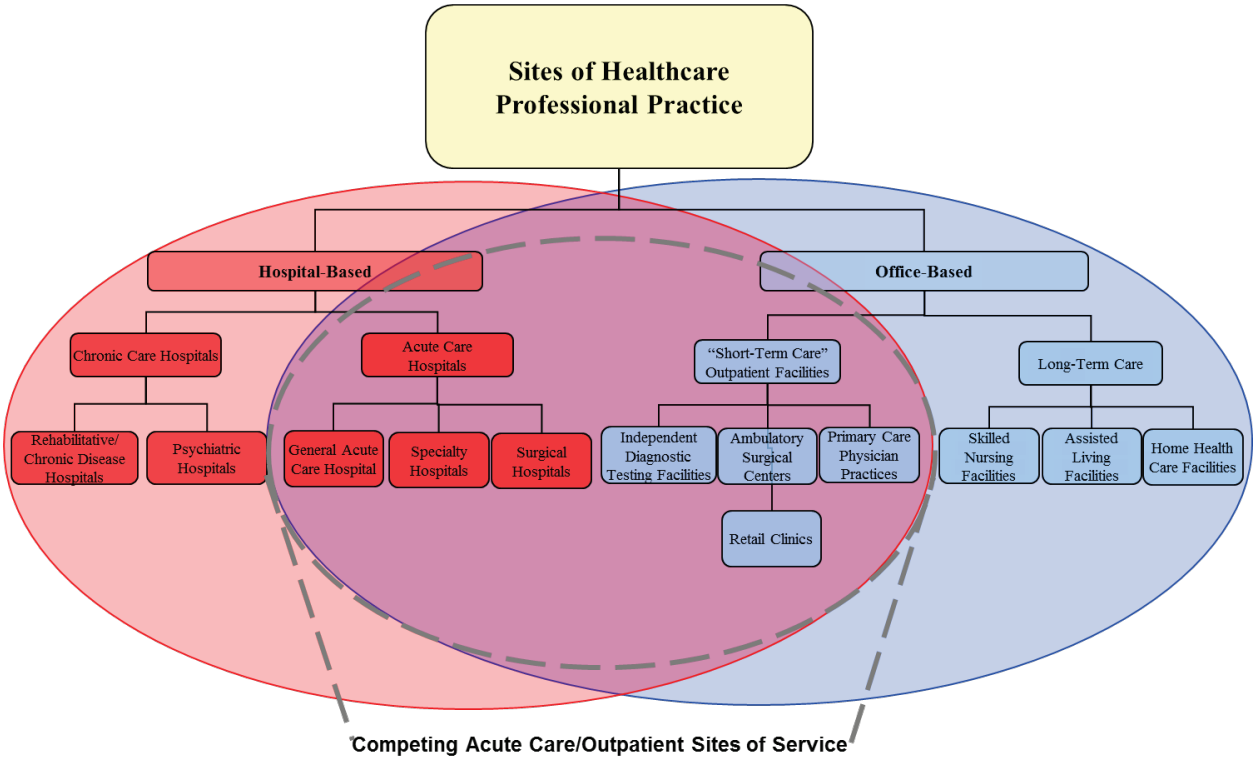
HOSPITAL-BASED SITES OF SERVICE

Industry financial outcomes suggest that hospitals serve as an influential force within the marketplace, not only as providers of healthcare services, but also as contributors to overall economic growth.[50] Despite the growth of outpatient and other office-based services,[51] hospitals "regularly rank among the top employers in urban and rural communities…"[52] Hospitals comprise the second-largest category of private employers in the country, with nearly 5.5 million people in the hospital workforce, costing hospitals $360 billion in employee compensation costs, as of 2011.[53]

> In 2011 alone, 129 million patients were admitted into hospital emergency departments, 526 million were admitted for outpatient services, 27 million surgeries were performed, and 4 million babies were delivered.[54]

47 "Physician Characteristics and Distribution in the US 2010 Edition" American Medical Association: Chicago, IL, 2010, p. xvii.
48 "Surgery Centers and Specialty Hospitals" Spotlight Report, Vol. 6, No. 2 (May 2003) p. 10.
49 "Minimally Invasive Surgery: Continued Growth Opens New Doors" By Michelle Beaver, Surgistrategies, 2009, http://www.surgistrategies.com/ articles/751feat3.html (Accessed 04/07/08); "New Twist in Employing Physicians" By Dan Beckham, Hospital and Health Networks, July 5, 2005, http://www.hhnmag.com/hhnmag_app/jsp/articledisplay.jsp?dcrpath=HHNMAG/PubsNewsArticle/data/050705HHN_Online_Beckham&domain= HHNMAG (Accessed 05/04/10).
50 "AHA Hospital Statistics: A Comprehensive Reference for Analysis and Comparison of Hospital Trends" American Hospital Association, Health Forum LLC, 2014, p. 13; "AHA Touts Industry's Economic Importance" By Melanie Evans, Modern Healthcare, April 7, 2008, http://modernhealthcare.com/apps/pbcs.dll/article?Date=20080407&Category=REG&ArtNo=168521945&SectionCat=&Template=printpicart (Accessed 06/18/08) ; "Beyond Health Care: The Economic Contribution of Hospitals" The American Hospital Association, Trendwatch, April 2008, http://www.aha.org/aha/trendwatch/2008/twapr2008econcontrib.pdf (Accessed 08/26/2009).
51 "Table 4.2: Distribution of Inpatient vs. Outpatient Revenues, 1993-2013" American Hospital Association, Trendwatch Chartbook, 2015.
52 "Hospitals as Employers" American Hospital Association, September 2011, http://www.aha.org/content/11/110909-employer.pdf (Accessed 4/6/15).
53 "The Economic Contribution of Hospitals Often Overlooked" American Hospital Association, January 2013, http://www.aha.org/content/11/11econcontrib.pdf (Accessed 4/7/15).
54 "The Economic Contribution of Hospitals Often Overlooked" American Hospital Association, January 2013, http://www.aha.org/content/11/11econcontrib.pdf (Accessed 4/7/15).

Figure 5-2: Sites of Healthcare Service



Source: "AHA Guide Hospital Listing Requirements," by the American Hospital Association, 2006, p. A2-A3; "Physician Characteristics and Distribution in the US 2010 Edition" American Medical Association, 2010, p. x vii-xix.

In order for a facility to be classified as a hospital, it must meet the following criteria:

(1) Include at least six inpatient beds that are continuously available to nonrelated patients who stay, on average, more than twenty-four hours;
(2) Be built to ensure patient safety and health by maintaining a comfortable and sanitary environment despite potentially busy and overcrowded facilities;
(3) Be governed by an authoritative body that assumes legal and moral responsibility for the hospital;
(4) Appoint a chief executive to whom the governing body delegates on matters of hospital operation and compliance with policy;
(5) Employ an organized medical staff of licensed physicians;
(6) Assign patients to members of the medical staff who are permitted to provide inpatient services in compliance with state laws and criteria;
(7) Ensure that continuous nurse supervision and nursing services are afforded to patients;
(8) Ensure the maintenance for continuous and complete medical records for all patients;
(9) Provide pharmacy services managed by a registered pharmacist; and
(10) Provide amenable food services to patients.[55]

55 "AHA Guide to the Health Care Field" American Hospital Association, 2006, p. A2.

Hospitals can provide both acute care and chronic care services, and some hospitals provide both.

Chronic Care Hospitals

As seen in Figure 5-2 above, two main types of chronic care hospitals exist: (1) rehabilitation and chronic disease hospitals and (2) psychiatric hospitals.[56]

Rehabilitation and Chronic Disease Hospitals

By providing services that promote restoring health, maximizing quality of life, and recovery, *rehabilitation* and *chronic disease hospitals* can effectively service disabled patients.[57] Although outpatient services have become increasingly popular in the provision of healthcare to some chronic patients (for example, treatment of kidney failure in dialysis centers),[58] rehabilitation and chronic disease hospitals typically provide the types of long-term care that may not suitable for an outpatient setting.[59] They also ensure patient access to rehabilitation therapists (including physical therapists, occupational therapists, audiologists, and speech pathologists),[60] psychological and counseling services, and educational and vocational guidance.[61] Finally, the facilities should provide accommodations that promote ease-of-transfer to acute care facilities.[62]

Psychiatric Hospitals

Psychiatric hospitals administer specialized services to patients with psychiatric illnesses. According to the American Hospital Association, similar to rehabilitation and chronic disease hospitals, diagnostic and laboratorial accommodations must be available at psychiatric facilities, and patients must have access to psychiatric, psychological, social work, and electroencephalograph services.[63] Also, written arrangements for patient transfer to acute care facilities should be made.[64]

Acute Care Hospitals

As previously discussed above, hospitals are a major driver within the U.S. healthcare industry. Although chronic care hospitals will always exist in some capacity, the impact of an increased proportion of the population at high risk for acute illness (i.e., the ageing *baby boom* generation), combined with the evolution of many chronic diseases into manageable living conditions, has

56 Ibid, p. A2-A3.
57 Ibid, p. A3.
58 "Treatment Methods for Kidney Failure: Hemodialysis" National Kidney and urologic Diseases Information Clearinghouse, June 25, 2014, http://kidney.niddk.nih.gov/KUDiseases/pubs/hemodialysis/ (Accessed 4/14/15).
59 "Inpatient Rehabilitation Facilities" American Hospital Association, http://www.aha.org/content/12/12factsheet-irf.pdf (Accessed 4/14/15).
60 As discussed in Chapter 8, *Midlevel Providers*.
61 "AHA Guide to the Health Care Field" American Hospital Association, 2006, p. A3.
62 Ibid.
63 Ibid.
64 Ibid.

brought acute care hospitals to the forefront of the healthcare industry's competitive market.[65] Acute care hospitals are equipped to diagnose and treat injuries and other acute conditions and may be further classified as either general or specialty hospitals.[66]

General Acute Care Hospitals

Although demand for inpatient care still exists, hospital-based practice trends have been influenced largely by the shift from inpatient care to outpatient care. Hospital outpatient gross revenue reached almost 45 percent of total revenue in 2013, up from 35 percent in 2003.[67] Additionally, many hospitals face emerging competition in outpatient care from free-standing outpatient facilities,[68] which may lead to constraints on acquiring scarce capital. General acute care hospitals have continued to be key players in the hospital-based market. The total net revenue of U.S. general acute care hospitals was approximately $821.3 billion in 2012 compared to $587.1 billion in 2006, which represents a compound annual growth rate of 5.75 percent.[69] Note that profit margins for hospitals also increased during the same period, with Aggregate Total Hospital Margins[70] at 7.9 percent in 2013, up from 6.0 percent in 2006.[71]

> Hospital outpatient gross revenue reached almost 45 percent of total revenue in 2013, up from 35 percent in 2003.
>
> ***American Hospital Association, 2015.***

> The total net revenue of U.S. general acute care hospitals was $821.3 billion in 2012, with Aggregate Total Hospital Margins of 7.9% in 2013.
>
> ***American Hospital Association, 2015.***

Facilities with a shorter anticipated length of stay are classified as *short-term acute care hospitals (STACHs).*[72] During the past century, STACHs have become a dominant player in the acute care hospital industry subsector, as well as within the entire healthcare industry. However, reimbursement decreases and cost increases are impacting the profitability of many STACHs, causing many to seek affiliation and integration opportunities.[73]

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65 "2006 National Hospital Discharge Survey" By Carol J. DeFrances et al., Department of Health and Human Services, National Health Statistics Reports, No. 5 (June 30, 2008) p. 1; "Health, United States, 2008 With Special Feature on the Health of Young Adults" National Center for Disease Statistics, Department of Health and Human Services, March 2009, http://www.cdc.gov/nchs/data/hus/hus08.pdf#120 (Accessed 09/11/09).1, 3-4; "National Hospital Ambulatory Medical Care Survey: 2006 Outpatient Department Summary" National Health Statistics Reports, Vol. 4 (August 6, 2008) p. 2, 3.

66 "AHA Guide to the Health Care Field" American Hospital Association, 2006, p. A2-A3.

67 "Table 4.2: Distribution of Inpatient vs. Outpatient Revenues, 1993-2013" American Hospital Association, Trendwatch Chartbook, 2015.

68 "The New Normal? Shift to outpatient care, payer pressure hit hospitals" By Beth Kutscher and Melanie Evans, Moder Healthcare, August 10, 2013, http://www.modernhealthcare.com/article/20130810/MAGAZINE/308109974 (Accessed 4/7/15).

69 "AHA Hospital Statistics: A Comprehensive Reference for Analysis and Comparison of Hospital Trends" American Hospital Association, Health Forum LLC, 2014, p. 13.

70 Calculated as the difference between Total Net Revenue and Total Expenses divided by Total Net Revenue.

71 "Table 4.1: Aggregate Total Hospital Margins(1) and Operating Margins(2); Percentage of Hospitals with Negative Total Margins; and Aggregate Non-operating Gains as a Percentage of Total Net Revenue, 1993 – 2013" American Hospital Association, Trendwatch Chartbook, 2015.

72 "Hospitals Today" Connecticut Office of Health Care Access, 2008, http://www.ct.gov/ohca/lib/ohca/hospitalstudy/HospToday.pdf (Accessed 06/18/08) p. 17.

73 "Going vertical: Opportunities for hospitals to embrace post-acute care" Deloitte, Instant Insights, 2014, https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-going-vertical.pdf (Accessed 4/6/15) p. 1.

Long-term acute care hospital (LTACHs) provide services to inpatients whose ALOS exceeds twenty-five days.[74] LTACHs treat patients that "have more than one serious condition, but who may improve with time and care, and return home."[75] Patients who require continuous care due to persistent conditions are often relocated to LTACHs either from short-term acute care hospitals (due to insufficient resources in specialized care) or from intensive care units (due to prolonged stays that do not necessitate intensive care unit services).[76] LTACHs are cost effective and provide a more appropriate level of specialized care for these types of patients than do general acute care hospitals.[77]

Specialty and Surgical Hospitals

Specialty hospitals for children and for diseases of the eye, ear, and throat have a long-established and celebrated history in the U.S., dating back to the eighteenth century.[78] However, hospitals focusing on cardiovascular and orthopedic procedures are relatively new.[79] The establishment of single-specialty hospitals is attributable to changes in market demand during the past fifty years paired with specialists seeking greater control over the clinical services they provide.[80] Specialty hospitals are frequently established and owned by physicians and may focus on the delivery of medical specialists services, including surgical, orthopedic, spinal, or cardiac services.[81] The success of specialty hospitals can be attributed to several factors, including favorable reimbursement for select procedures as compared with other, less specialized procedures, synergistic efficiencies arising from specialization, and greater physician control over management decisions affecting productivity.[82]

In its 2003 report on specialty and surgical hospitals, the U.S. Government Accounting Office defined a *surgical hospital* as a short-term acute care hospital at which surgical diagnosis-related groups comprise greater than two thirds of its inpatient claims.[83] This definition excluded government-owned hospitals; hospitals that provide rehabilitation and psychiatric services, treatment for alcohol- and drug-related issues, or care for children or newborns; and hospitals with fewer than ten annual claims per bed.[84] In its 2008 report, the Office of the Inspector General simplified this definition, stating that a minimum 45 of a surgical hospital's Medicare discharges must involve a surgical procedure.[85] It proceeded to define a hospital as a *cardiac* or

74 "What are Long-Term Care Hospitals?" Centers for Medicare & Medicaid Services, August 2014, https://www.medicare.gov/Pubs/pdf/11347.pdf (Accessed 4/6/15).
75 Ibid.
76 "2004 Financial Analysis: Volume 1: General Acute Care Hospitals" Pennsylvania HealthCare Cost Containment Council, April 2005, p. 45; "Report to the Congress: New Approaches in Medicare" Medicare Payment Advisory Commission (MedPAC) June 2004, p. 125.
77 "Report to the Congress: New Approaches in Medicare" Medicare Payment Advisory Commission (MedPAC) June 2004, p. 125.
78 "A History of Medicine" By Arturo Castiglioni, New York, NY: Alfred A. Knopf, Inc., 1947, p. 733, 862; "Specialty Hospitals: Focused Factories or Cream Skimmers?" By Kelly Devers et. al., Centers for Studying Health System Change, No. 62 (April 2003) Accessed at http://www.hschange.com/CONTENT/552/ (Accessed 5/24/10).
79 "Specialty Hospitals: Focused Factories or Cream Skimmers?" By Kelly Devers et. al., Centers for Studying Health System Change, No. 62 (April 2003) Accessed at http://www.hschange.com/CONTENT/552/ (Accessed 5/24/10).
80 Ibid.
81 "Physician-Owned Specialty Hospitals' Ability to Manage Medical Emergencies" By Daniel R. Levinson, Report for Department of Health and Human Services, January 2008, p. 1.
82 "Specialty Hospitals: Focused Factories or Cream Skimmers?" By Kelly Devers et. al., Centers for Studying Health System Change, No. 62 (April 2003) Accessed at http://www.hschange.com/CONTENT/552/ (Accessed 5/24/10).
83 "Specialty Hospitals: Information on National Market Share, Physician Ownership, and Patients Served" By General Accounting Office, Letter to Bill Thomas and Jerry Kleczka, April 18, 2003, p. 16.
84 Ibid.
85 "Physician-Owned Specialty Hospitals' Ability to Manage Medical Emergencies" By Daniel R. Levinson, Report for Department of Health and Human Services, January 2008, p. 6.

orthopedic specialty hospital if a minimum of 45 percent of its Medicare discharges involved procedures within their corresponding specialties.[86] Furthermore, cardiac and orthopedic hospitals, respectively, must have at least five major heart or orthopedic surgery discharges each year, respectively.[87]

Physician-owned specialty hosptials have experienced significant growth during the past two decades,[88] increasing from from 46, in 2002,[89] to 238,[90] in 2013, representing a compound annual growth rate of 16.12 percent.

One of the first surgical hospitals started as a hybrid of a small hospital unit and an *ambulatory surgery center (ASC).*[91] In fact, this surgical hospital was converted from an ASC in 1988 after the California legislature passed a bill allowing ASCs to add up to twenty beds that were limited to a seventy–two hour stay.[92] Surgical hospitals are characterized as having a limited number of beds and specializing in scheduled, rather than emergency, surgeries.[93]

General acute care hospitals have responded to the development of niche providers and specialty hospitals by increasing the number of services they provide.[94] In many cases, hospitals may seek physician involvement in these developments through joint ventures.[95]

> The first modern surgical hospital in the United States was converted from an ASC in 1988 after the California legislature passed a bill allowing ASCs to add up to twenty beds limited to a seventy-two-hour stay.
>
> ***"Alan Peirrot, January 2003.***

OFFICE-BASED SITES OF SERVICE

All practices that are not hospital-based are classified as office-based practices.[96] Office-based practices may be solo practices, group practices, specialty practices, or multispecialty group practices.[97]

There are a growing number of diverse outpatient office-based facilities tailored to meet the accelerated growth in demand for healthcare services. The most successfully implemented of

86 "Physician-Owned Specialty Hospitals' Ability to Manage Medical Emergencies" By Daniel R. Levinson, Report for Department of Health and Human Services, January 2008, p. 6.
87 Ibid.
88 "Specialty Hospitals: Information on National Market Share, Physician Ownership, and Patients Served" By General Accounting Office, Letter to Bill Thomas and Jerry Kleczka, April 18, 2003, p. 3.
89 "Report to the Congress: Medicare Payment Policy" Medicare Payment Advisory Commission, March 2009, p. 335.
90 "Physician-owned hospitals seize their moment" By Tanya Henry, American Medical Association News, April 29, 2013, http://www.amednews.com/article/20130429/government/130429948/4/ (Accessed 3/31/15).
91 "Inside the first surgical hospital" By Alan Pierrot, Outpatient Surgery, January 2003, http://www.outpatientsurgery.net/guides/surgical-construction/2003/first-surgical-hospital, (Accessed 9/29/09).
92 Ibid.
93 "Surgery Centers and Specialty Hospitals" Spotlight Report, Vol. 6, No. 2 (May 2003) p. 10.
94 "General Hospitals, Specialty Hospitals, and Financially Vulnerable Patients" By Ann Tynan, Elizabeth November et al., Center for Studying Health System Change, April 2009, No. 11, p. 5; "New Twist in Employing Physicians" By Dan Beckham, Hospital and Health Networks, July 5, 2005, http://www.hhnmag.com/hhnmag_app/jsp/articledisplay.jsp?dcrpath=HHNMAG/PubsNewsArticle/data/050705HHN_Online_Beckham&domain=HHNMAG (Accessed 05/04/10).
95 Ibid.
96 "Physician Characteristics and Distribution in the US 2010 Edition" American Medical Association: Chicago, IL, 2010, p. xvii-xix.
97 Ibid.

these outpatient facilities provide short-term outpatient services (specifically diagnostic services and medical or surgical services), long-term outpatient care, and home health services.

Short-Term Care Outpatient Facilities

The healthcare marketplace continues to experience dramatic change as the business of healthcare becomes increasingly competitive, particularly in the outpatient arena. Visits to outpatient facilities increased from 67,232,000 in 1995 to 125,721,000 in 2011 (which represents a compound annual growth rate of nearly 4 percent), with outpatient visits among Americans older than sixty-five years of age increasing from 10,486,000 in 1995 to 22,534,000 in 2011 (which represents a compound annual growth rate of nearly 5 percent).[98] If the utilization rate of outpatient facilities among the elderly continues to grow, a surge in demand for outpatient surgery centers and independent diagnostic testing facilities (IDTFs) can be anticipated as the baby boomer population ages.

> Outpatient facility visits increased from 67,232,000 in 1995 to 125,721,000 in 2011, which represents a compound annual growth rate of nearly 4 percent; while outpatient visits for Americans aged 65 years and older increased from 10,486,000 in 1995 to 22,534,000 in 2011, which represents a compound annual growth rate of nearly 5 percent.
>
> ***U.S. Department of Health and Human Services, 2013.***

Historically, short-term care outpatient facilities have been comprised of primary care physician practices. However, with improvements in technology and treatment, the range of outpatient procedures that can feasibly be performed has expanded.[99] These technological advances have led to a growing range of services are no longer exclusive to hospital outpatient departments, but also can be performed in various freestanding outpatient centers.[100] In addition to primary care physician practices, ASCs and IDTFs have also proven to be viable options outside the traditional hospital outpatient short term care setting.[101]

Ambulatory Surgical Centers

ASCs are facilities that offer surgical services to patients which do not require inpatient hospital admission.[102] ASCs come in two varieties: single specialty and multispecialty centers. As of 2007, 64 percent of ASCs were multispecialty centers, and 36 percent were single-specialty

98 "Health, United States, 2013" U.S. Department of Health and Human Services, 2013, Table 89, p. 283.

99 "Outpatient Outlook" By Kara Olsen, Health Leaders Media, http://www.healthleadersmedia.com/content/MAG-86466/Outpatient-Outlook (Accessed 4/7/15); "Surgery Centers and Specialty Hospitals" Spotlight Report, Vol. 6, No. 2 (May 2003) p. 10.

100 "2006 National Hospital Discharge Survey" By Carol J. DeFrances et al., Department of Health and Human Services, National Health Statistics Reports, No. 5 (June 30, 2008) p 1; "Ambulatory Surgery Centers Cutting into Hospital or Business—News" By Karin Lillis, Health Purchasing News, October 2002, http://findarticles.com/p/articles/mi_m0BPC/is_10_26/ai_93207685, (Accessed 08/24/07).

101 "Ambulatory Surgery Centers Cutting into Hospital or Business—News" By Karin Lillis, Health Purchasing News, October 2002, http://findarticles. com/p/articles/mi_m0BPC/is_10_26/ai_93207685, (Accessed 08/24/07); "Outpatient imaging centers grow by adding new services—Issue 1" By Karen Sandrick, Diagnostic Imaging, Vol. 30, No. 12, (December 1, 2008) http://www.diagnosticimaging.com/ practice-management/ article/113619/1354173 (Accessed 6/15/09).

102 "Meeting America's Surgical Needs" Ambulatory Surgery Center of America, 2009, http://www.ascassociation.org/masn.pdf (Accessed 05/24/10).

centers; however, as of 2010, only 47 percent of ASCs were multispecialty centers and 53 percent were single-specialty centers.[103]

The dramatic shift from inpatient to outpatient services experienced in the healthcare industry over the past years has been a catalyst for the growth and expansion of the ASC market.[104] Surgical procedures that were once the exclusive province of hospital-based inpatient surgery departments are now commonly performed at freestanding ASCs.[105]

To some extent, ASCs have become the preferred venue for treating some of the most lucrative diseases in the outpatient setting.[106] Due to increases in the incidence of such diseases resulting from the ageing *baby boomer* population, as well as consumer demand trends and technological developments, the number of freestanding ASCs has increased significantly during the past decade, particularly in the areas of gastroenterology; orthopedics; gynecology; podiatry; pain management; general surgery; ophthalmology; and ear, nose, and throat.[107] The average annual growth rate of Medicare-certified ASCs was 2.5 percent from 2007 to 2011, and the growth rate in 2012 was 1.2 percent.[108] This increase in the number of facilities is attributed to the expanded range of Medicare approved services, which has led to significant growth in the number and types of procedures performed.[109]

> The average annual growth rate of Medicare-certified ASCs was 2.5 percent from 2007 to 2011, and the growth rate in 2012 was 1.2 percent.
>
> ***Medicare Payment Advisory Commission, March 2014.***

ASCs, which outnumber specialty hospitals, also tend to be less capital-intensive than specialty hospitals.[110] ASCs also grant physicians greater autonomy in setting and maintaining their own schedules,[111] which allows ASCs to efficiently minimize turnaround times and maximizes the procedure volume and operating room throughput. In addition to the economic efficiencies and quality of care benefits of ASCs, patients have also expressed a favorable opinion of ASCs due to the less "institutional" nature of most ASCs.[112] Surgeons also often prefer these facilities because they are able to leverage the operating efficiencies of the ASC to augment their own productivity, i.e., greater efficiency can lead to greater throughput volumes for the individual

103 "The ASC Industry in the United States:Evolution, Landscape and Future" By Vivek Taparia, Director of Business Development for Regent Surgical Health, October 23, 2012, p. 10.
104 "Medicare May Expand Approved Outpatient Surgeries" By Michael Romano, Modern Healthcare, December 21, 2005, http://www.modernhealth care.com/news.cms?newsId=4637 (Accessed 05/10/06).
105 Ibid.
106 "Competition Keeps Getting Hotter for Ambulatory Surgery" By Richard Haugh, Hospital and Health Networks, October 2006, http://www.hhnmag.com/hhnmag_app/jsp/articledisplay.jsp?dcrpath=HHNMAG/PubsNewsArticle/data/2006October/0610HHN_FEA_ClinicalMgt&domain=HHNMAG (Accessed 05/18/10).
107 Ibid.
108 "Report to the Congress: Medicare Payment Policy" Medicare Payment Advisory Commission, March 2014, Chapter 5, p. 121.
109 "Intellimarker: Ambulatory Surgical Centers Financial and Operational Benchmarking Study" VGMA Health, LLC, 2009, p. 8.
110 "Specialty Versus Community Hospitals: What Role for Law?" By Sujit Choudhry, Nitessh K. Choudhry, and Troyen A. Brennan, Health Affairs, Web Exclusive, (August 9, 2005) p. 362.
111 "Intellimarker: Ambulatory Surgical Centers Financial and Operational Benchmarking Study" Informed Healthcare Media, LLC: Dallas, TX, 2006, p. 7.
112 Ibid.

physician, thereby increasing their revenue generating capabilities in comparison with a traditional hospital setting.[113]

Independent Diagnostic Testing Facilities

In the past, favorable shifts in demographic and reimbursement landscapes that made the use of imaging technology more patient-friendly had significantly increased demand for diagnostic imaging services. However, utilization for these services has been declining since 2009, perhaps due to the elimination of unnecessary testing and the healthcare industry's focus on value-based care.[114] Similarly, Medicare spending on diagnostic imaging declined by 21 percent from 2006 to 2010, mainly due to changes to the methodology employed by Medicare in the reimbursement of imaging services. [115]

The number of noninvasive imaging procedures conducted in outpatient settings was among the most dynamic areas of growth in physician services reimbursed by the Centers for Medicare & Medicaid Services (CMS). Outpatient imaging procedures accounted for approximately 75 percent of all imaging services paid for under the 2006 Medicare physician fee schedule.[116] However, in 2012, spending on imaging services decreased by 5.1 percent from 2011, which was due, in part, to a 3.2 percent drop in utilization.[117]

The issue of in-office ancillary imaging has created a competitive environment between radiologists and other physicians,[118] with radiologists facing increased competition from referring physicians who favor performing their own imaging services in-office.[119] There are some who suggest that the interpretation of in-office imaging scans by referring physicians has the added benefit of assisting in the improvement of the patient's continuity of care.[120] Additionally, practitioners, unlike the diagnostic radiologists who historically performed imaging procedures, are familiar with their patients' health backgrounds and, therefore, may be more effective in caring for the patients.[121]

113 "Ambulatory Surgical Centers Position Statement" American Academy of Orthopaedic Surgeons, http://www.aaos.org/about/papers/position/1161.asp (Accessed 4/6/15).

114 "Medical Imaging: Is the Growth Boom Over?", American College of Radiology, Harvey L. Neiman Health Policy Institute, Studies in Health Care and Economics, Policy Brief #1, October 2012, p. 1; "Decline in Utilization rates Signals a Change in the Inpatient Business Model" By Mark Grube, Heatlh Affairs, March 8, 2013, http://healthaffairs.org/blog/2013/03/08/decline-in-utilization-rates-signals-a-change-in-the-inpatient-business-model/print/ (Accessed 4/14/15).

115 "Medical Imaging: Is the Growth Boom Over?" American College of Radiology, Harvey L. Neiman Health Policy Institute, Studies in Health Care and Economics, Policy Brief #1, October 2012, p. 3.

116 "Medicare Part B Imaging Services: Rapid Spending Growth and Shift to Physician Offices Indicate Need for CMS to Consider Additional Management Practices" Report to Congressional Requesters, GAO-08-452, Washington, D.C.: United States Government Accountability Office, June 2008, http://www.gao.gov/new.items/d08452.pdf (Accessed 05/03/10) p. 18.

117 "A Data Book: Health Care Spending and the Medicare Program" Medicare Payment Advisory Commission, June 2014, p. 106.

118 "Are Cardiologists the QB of Cardiac Imaging" By Cristen C. Bolen, Diagnostic & Invasive Cardiology, July/August 2008, http://new.reillycomm. com/diagnostic/article_detail.php?id=611 (Accessed 08/19/08) ; "President's Message: The Imaging Cardiologist," Journal of Nuclear Cardiology ASNC Update, March/April 2007.

119 "Are Cardiologists the QB of Cardiac Imaging" By Cristen C. Bolen, Diagnostic & Invasive Cardiology, July/August 2008, http://new.reillycomm. com/diagnostic/article_detail.php?id=611 (Accessed 08/19/08); "Self-Referral Issue Isolates Radiology in Multispecialty Forum" By Tracie L. Thompson, Auntminnie, October 7, 2004, www.auntminnie.com/index.asp?Sec=sup&Sub=imc&Pag=dis&ItemID=63177 (Accessed 2/18/05);

120 "Are Cardiologist's the QB's of Cardiac Imaging" By Cristen Bolan, Diagnostic and Invasive Cardiology, July/August 2008, Accessed at http://www.dicardiology.net/print/28639?t= (Accessed 5/17/10).

121 Ibid.

Long-Term Care Facilities

Long-term care is a service provided to individuals who need continuous assistance due to a physical or mental disability.[122] These services can be provided in an institution, in the home, or in the community.[123] Long-term care facilities include, but are not limited to, nursing homes, assisted living facilities, SNFs, and intermediate care facilities. The diversity of housing options evident in the long term care market reflects the evolving demographics make-up of the U.S. population.[124] Although a significant percentage of people who need long-term care are elderly, long term care services are also provided to children, teenagers, and adults who also may require the continuous assistance provide by long-term care facilities.[125]

Skilled Nursing Facilities

Skilled nursing facilities (SNF), or *nursing homes*, are institutions that provide skilled nursing care and related services for injured, disabled, or sick residents.[126] SNFs are distinct from long-term mental care facilities, described above, in that they are *not* primarily for the care and treatment of mental diseases.[127] An SNF provides predominantly inpatient skilled nursing care and rehabilitative services, and the facility can be part of a hospital or hospital system.[128] The staff at a SNF includes registered nurses, licensed practical and vocational nurses, physical and occupational therapists, speech pathologists, and audiologists.[129] Nursing homes focus their attention on rehabilitating patients through specialty care and therapies, including physical, occupational, speech, and respiratory therapy.[130]

As of 2013 there were approximately 15,163 skilled nursing facilities in the United States.[131] Note that these facilities also house patients who recently have been discharged from a hospital and are in a transitional period before returning home.[132] SNF patients comprise only 8 percent of residents in nursing homes,[133] and the Medicare ALOS in this type of facility is between 33 and 39 days.[134]

> As of 2013 there were approximately 15,163 skilled nursing facilities in the United States.
>
> ***Medicare Payment Advisory Commission, June 2014.***

122 "Senior Housing: Looking Toward the Third Millennium" By Arthur E. Gimmy, Susan B. Brecht and Clifford J. Dowd, Chicago, IL: Appraisal Institute, 1998, p. 197.
123 Ibid.
124 "Senior Housing: Looking Toward the Third Millennium" By Arthur E. Gimmy, Susan B. Brecht and Clifford J. Dowd, Chicago, IL: Appraisal Institute, 1998, p. 1.
125 "Selected Long-Term Care Statistics" Family Caregiving Alliance, http://www.caregiver.org/caregiver/jsp/content_node.jsp?nodeid=440 (Accessed 9/25/09).
126 "Senior Housing: Looking Toward the Third Millennium" By Arthur E. Gimmy, Susan B. Brecht and Clifford J. Dowd, Chicago, IL: Appraisal Institute, 1998, p. 24.
127 "Requirements for, and assuring quality of care in, skilled nursing facilities" 42 § U.S.C. § 1395i-3 (2009).
128 "Senior Housing: Looking Toward the Third Millennium" By Arthur E. Gimmy, Susan B. Brecht and Clifford J. Dowd, Chicago, IL: Appraisal Institute, 1998, p. 199.
129 "Medicare Coverage of Skilled Nursing Facility Care" Centers for Medicare & Medicaid Services, Department of Health and Human Services, April 2002, p. 4.
130 "What is a Nursing Home?" Nursing Home INFO, 2003, http://www.nursinghomeinfo. com/nhserve.html (Accessed 09/28/09).
131 "A Data Book: Health Care Spending and the Medicare Program" Medicare Payment Advisory Commission, June 2014, p. 111.
132 "Senior Housing: Looking Toward the Third Millennium" By Arthur E. Gimmy, Susan B. Brecht and Clifford J. Dowd, Chicago, IL: Appraisal Institute, 1998, p. 24.
133 "Report to the Congress: Medicare Payment Policy" Medicare Payment Advisory Commission, March 2005, p. 91.
134 "A Data Book: Health Care Spending and the Medicare Program" Medicare Payment Advisory Commission, June 2014, p. 117.

Assisted Living Facilities

Assisted living facilities combine permanent housing with personal support services.[135] They are designed for seniors who need help with daily activities but do not require more intensive skilled nursing care.[136] As of 2010, there were approximately 31,100 assisted living communities with a capacity to serve approximately 972,000 individuals.[137] The assisted living, continuing-care, and independent-living facilities businesses had estimated annual revenue of $60.2 billion in 2014.[138]

> The assisted living, continuing-care, and independent-living facilities businesses had estimated annual revenue of $60.2 billion in 2014.
>
> ***IBISWorld, April 2014.***

Home Health Services

Home health care is comprised of all nursing, therapeutic, medical, social, or aide services provided to a patient in a patient's home.[139] Technological advances in pharmaceuticals, infusion therapy, as well as *durable medical equipment (DME)* (for example, specialized beds, wheelchairs, and prosthetics), have enhanced the capabilities afforded to patients through home health services.

Organized home health care began in the late 1880s, when most seriously ill people were still cared for in their home, but infectious diseases and high death rates were prevalent.[140] Although modern hospitals were available during this period, the shift from home health care to institutional care occurred slowly.[141] A combination of visiting nurses, public health nurses, and private-duty nurses provided early professional home care.[142] By 1900, there were nearly 12,000 trained home health nurses nationwide.[143] One of the first home health care surveys, conducted in 1909, found that 565 organizations were providing home health services.[144]

The number of home health patients appears to be growing. In 2012, approximately 3.4 million Medicare beneficiaries received home care services, which represented a cost of nearly $18 billion.[145] The growing segment of the aging U.S. population will invariably contribute to the increased use of home infusion therapies.[146] In addition, approximately 69 percent of home

135 "Senior Living Communities: Operations Management and Marketing for Assisted Living, Congregate, and Continuing Care Retirement Communities" By Benjamin W. Pearce, Baltimore, MD: The Johns Hopkins University Press, 1998, p. 4.
136 Ibid.
137 "Assisted Living Community Profile" National Center for Assisted Living, 2015, http://www.ahcancal.org/ncal/resources/pages/alfacilityprofile.aspx (Accessed 3/31/2015).
138 "IBIS World Industry Report 62331: Retirement Communities in the US" IBISWorld, April 2014.
139 "Variation Among Home Health Agencies in Medicare Payments for Home Health Services" By June Gibbs Brown, Office of Inspector General, July 1995, p. 1.
140 "Hospital Home Care Strategic Management for Integrated Care Delivery" By Dan Lerman and Eric B. Linne, Chicago, IL: American Hospital Publishing Inc., 1993, p. 297.
141 Ibid.
142 Ibid.
143 Ibid.
144 Ibid.
145 "Report to the Congress: Medicare Payment Policy" Medicare Payment Advisory Commission, March 2014, Chapter 9, p. 213.
146 "The Impact of the Aging Population on the Health Workforce in the United States: Summary of Key Findings" Bureau of Health Professions, December 2005, p. 11/12/2010.

health recipients are older than age sixty-five.[147] As of 2013, the number of Americans aged sixty-five and older was nearly 45 million, which represents 14.1 percent of the total U.S. population. [148]

BUSINESS STRUCTURE OF HEALTHCARE PROFESSIONAL PRACTICES

The business structure of a healthcare professional practice may be characterized on the basis of how the legal ownership of the practice is structured, which primarily depends on the financial characteristics and tax posture of the practice, as well as the allocation of professional liability. In addition to the ownership and tax structure, another key facet of a practice's business structure is the type and method of organizational governance.

OWNERSHIP AND TAX STRUCTURE

Three kinds of liabilities must be considered before deciding upon a business structure for a healthcare practice: *financial liability*, *professional liability*, and *tax liability*.[149] *Financial liability* assigns responsibility for any debt accrued by the practice.[150] *Professional liability* allocates accountability for potential lawsuits.[151] *Tax liability* establishes whether income generated by the practice is filed on personal or corporate income tax returns.[152] Unlike the infrastructure of most businesses, healthcare practices are organized and managed under the pretense that physicians can not be protected from liability for their professional actions through their corporate structures and that practices are never entirely immune from liability for the actions of their employees.[153] Healthcare practices may be structured as various types of business entities, based on state law.[154]

147 "Basic Statistics About Home Care" National Association for Home Care and Hospice, 2008, http://www.nahc.org/facts/08HC_Stats.pdf (Accessed 04/28/09).

148 "USA Quick Facts from the US Census Bureau" US Census Bureau, 2015, http://quickfacts.census.gov/qfd/states/00000.html (Accessed 4/7/15).

149 "Types of Business Entities" By Sandra McDuffy, MedicalMatters.org, 2010, http://www.medicalmatters.org/types-of-business.html (Accessed 4/7/15); "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/2005/1100/p42.pdf (Accessed 4/7/15) p. 42, 44.

150 "When Starting Your Own Practice, Be Savvy About Successful Business Structure Basics" Rehab Regs, April 8, 2004, http://www.hcpro.com/RHB-37280-882/When-starting-your-own-practice-be-savvy-about-successful-business-structure-basics.html (Accessed 2/9/10).

151 "When Starting Your Own Practice, Be Savvy About Successful Business Structure Basics" Rehab Regs, April 8, 2004, http://www.hcpro.com/RHB-37280-882/When-starting-your-own-practice-be-savvy-about-successful-business-structure-basics.html (Accessed 2/9/10).

152 "When Starting Your Own Practice, Be Savvy About Successful Business Structure Basics" Rehab Regs, April 8, 2004, http://www.hcpro.com/RHB-37280-882/When-starting-your-own-practice-be-savvy-about-successful-business-structure-basics.html (Accessed 2/9/10).

153 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse. act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09).

154 "Corporate Practice of Medicine Doctrine 50 State Survey Summary" By Mary Michal et al., National Hospice and Palliative Care Organizaiton, September 2006, http://www.nhpco.org/sites/default/files/public/palliativecare/corporate-practice-of-medicine-50-state-summary.pdf (Accessed 4/6/15); "Starting a Solo Practice: Choice of Legal Entity" By Alan Matilsky and Lawrence Geller, American Academy of Opthalmology, http://www.aao.org/aaoe/ophthalmology-job-center-starting-a-solo-practice-part3.cfm (Accessed 4/6/2015).

Healthcare practices may be structured as various types of business entities, based on state law.

Practices can mitigate the risk to the owners of the practice by weighing the three dimensions of liability and the risk associated with physician liability when deciding on a business structure.[155] Professional liability, discussed further in Chapter 3 of *An Era of Reform—The Four Pillars*, may be viewed as indirectly related to the ownership structures of healthcare enterprises, while tax and financial liability are inherent contributors to practice infrastructure. Generally speaking, unincorporated practices forego the liability protection afforded to corporations (incorporated practices) in exchange for easier setup at a lower cost.[156] Incorporated practices, typically, are significantly more expensive and formal, involving copious amounts of paperwork.[157] In exchange, incorporated practices offer protection from personal liability for the professional misdemeanors of other practitioners in the corporation.[158] Though a practitioner may be personally liable for claims arising from his or her own negligence, a practitioner will not be personally responsible for claims against other practice members, standing only to lose his or her investment in the corporation.[159]

The following three general ownership structures may be considered when balancing the different aspects of legal ownership and tax repercussions of a practice along with the corresponding privileges and responsibilities: (1) sole proprietorships, (2) partnerships, and (3) corporations.[160] Additionally, emerging hybrid structures are being developed by a growing number of healthcare professional practices, such as (1) joint ventures, (2) limited liability companies (LLCs), (3) professional limited liability companies (PLLCs), and (4) limited liability partnerships (LLPs).[161] The growing number of refined, modified, and crossbred business structures may be causally linked to the increasing complexity and diversity that characterizes the U.S. healthcare delivery system. Care should be afforded to local and state regulations regarding the formation of a corporation, particularly when considering one of the class of emerging structures which may not clearly defined by the locality's regulatory structure or sufficiently tested by the local judicial system.

155 "Types of Business Entities" By Sandra McDuffy, MedicalMatters.org, 2010, http://www.medicalmatters.org/types-of-business.html (Accessed 4/7/15); "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/2005/1100/p42.pdf (Accessed 4/7/15) p. 42, 44.

156 "Starting a Solo Practice: Choice of Legal Entity" By Alan Matilsky and Lawrence Geller, American Academy of Ophthalmic Executives, http://www.aao.org/aaoe/ophthalmology-job-center-starting-a-solo-practice-part3.cfm (Accessed 4/7/15); "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/2005/1100/p42.pdf (Accessed 4/7/15) p. 43-44.

157 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse. act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09); "Starting a Solo Practice: Choice of Legal Entity" By Alan Matilsky and Lawrence Geller, American Academy of Ophthalmic Executives, http://www.aao.org/aaoe/ophthalmology-job-center-starting-a-solo-practice-part3.cfm (Accessed 4/7/15).

158 "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/2005/1100/p42.pdf (Accessed 4/7/15) p. 44.

159 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.i copyright.net/user/viewFreeUse.act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09); "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/2005/1100/p42.pdf (Accessed 4/7/15) p. 44.

160 "Buying, Selling, and Owning the Medical Practice: The Physician's Handbook to Ownership Options" By Matt Reiboldt, Norcross, GA: Coker Publishing LLC, 1996, p. 31.

161 Ibid, p. 41-43.

Sole Proprietorships

Sole proprietorships are considered the easiest, cheapest, and most dangerous business structure for healthcare practices.[162] Proprietors who utilize this business structure fill out minimal paperwork and are personally responsible for all debts of the enterprise.[163] Furthermore, sole proprietors and their practices are treated as a single entity for tax purposes, with all income generated by the practice considered personal income of the sole proprietor for tax purposes.[164] Sole proprietors also enjoy no liability protection from a corporation and may have to satisfy judgments against the sole proprietorship using personal assets.[165] Experts typically advise solo practitioners to pursue LLP or LLC structures for their practices.[166]

Partnerships

Partnerships retain the structural simplicity of sole proprietorships. As a single legal and taxable entity with multiple partners, the process of establishing and maintaining a compliant partnership requires more paperwork than a sole proprietorship and may result in more complicated liability implications.[167] Physicians within partnerships agree to share profits and losses just like any other unincorporated business. Under the Uniform Partnership Act, all partners are subject to *joint and several liability*, which means that each practitioner is personally liable for all claims against the partnership or any individual partner, regardless of who is at fault.[168]

Generally speaking, a *professional partnership* is an agreement between licensed professionals for the purposes of establishing a business within their profession.[169] *Limited partnerships* typically involve "general" partners, who are responsible for the general proceedings and are held entirely liable and responsible for the business, and one (or more) "limited," or investor, partner who has a limited, if any, role in the actual activities performed within the business.[170]

Practices structured as partnerships are dwindling due to the greater legal protection afforded by a corporate structure.[171] Also, the number of LLCs has begun growing, as most states now allow practices to operate under these business structures.[172]

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162 Ibid, p. 31-33.
163 "Starting a Solo Practice: Choice of Legal Entity" By Alan Matilsky and Lawrence Geller, American Academy of Ophthalmic Executives, http://www.aao.org/aaoe/ophthalmology-job-center-starting-a-solo-practice-part3.cfm (Accessed 4/7/15).
164 Ibid.
165 "Buying, Selling, and Owning the Medical Practice: The Physician's Handbook to Ownership Options" By Matt Reiboldt, Norcross, GA: Coker Publishing LLC, 1996, p. 31-33; "Types of Business Entities" By Sandra McDuffy, MedicalMatters.org, 2010, http://www.medical matters.org/types-of-business.html (Accessed 4/7/15).
166 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/ user/viewFree Use.act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09).
167 "Types of Business Entities" By Sandra McDuffy, MedicalMatters.org, 2010, http://www.medicalmatters.org/types-of-business.html (Accessed 4/7/15).
168 "Partner's Liability" § 306, Revised Uniform Partnership Act (2015).
169 "Buying, Selling, and Owning the Medical Practice: The Physician's Handbook to Ownership Options" By Matt Reiboldt, Norcross, GA: Coker Publishing LLC, 1996, p. 34.
170 Ibid.
171 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/ viewFreeUse.act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09).
172 Ibid.

Professional Corporations

A *professional corporation,* also known as a *professional association* or a *service corporation*, is "a separate legal entity, totally independent of its employees, stockholders, and member owners."[173] For the purposes of complying with state and federal tax laws, professional corporations may be Subchapter C corporations or Subchapter S corporations.[174]

C Corporations

A *C corporation* is a type of professional corporation comprised of three tiers of authority: (1) owners (shareholders); (2) a board of directors; and (3) officers.[175] Through the issuance of stocks, physicians can acquire or divest their ownership interest in the enterprise without disrupting the corporate infrastructure.[176] Although C corporations can issue common stock or preferred stock, preferred stock is typically afforded a schedule of fixed payments that take precedence over common stock and is paid out first when the practice is liquidated.[177] C corporations can issue voting and nonvoting shares,[178] which may assist a practice to designate seniority among its members.[179] The financial pitfall to be aware of with C corporations is that their profits are subject to double taxation as they are taxed first at the corporate level and then a second time at the personal level when the owner physician shareholders are paid their dividends.[180]

S Corporations

Like C corporations, *S corporations* can also issue stock. However, S corporations are limited to a certain number of shareholders and can only issue one class of stock, either common or preferred.[181] The advantage of an S corporation structure is that stock profits are distributed directly to the owners' without taxation and only taxed at the personal level, thereby avoiding the double taxation trap of C corporation profits.[182]

Although S corporations do have disadvantages (for example, S corporations do not allow employee benefits to be written off as a tax deduction), any negative aspects are most likely outweighed by the fact that "losses that routinely occur at the startup of any practice are passed

173 "Buying, Selling, and Owning the Medical Practice: The Physician's Handbook to Ownership Options" By Matt Reiboldt, Norcross, GA: Coker Publishing LLC, 1996, p. 34.
174 "Choosing a Professional Legal Entity" By Dana L. Holtz and Mark D. Abruzzo, Physician's News Digest, July 1999, http://www.physiciansnews.com/law/799.html (Accessed 03/05/10).
175 "Corporate Structure: Directors to Shareholders" FindLaw, http://smallbusiness.findlaw.com/incorporation-and-legal-structures/corporate-structure-directors-to-shareholders.html (Accessed 4/7/15).
176 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse. act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09).
177 Ibid.
178 "The Reemergence of C Corporations" By Jacob Favaro, American Institute of CPAs, December 18, 2014, http://www.cpa2biz.com/Content/media/PRODUCER_CONTENT/Newsletters/Articles_2014/CorpTax/reemergence-of-C-corporations.jsp (Accessed 4/7/15).
179 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse. act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09).
180 "Types of Business Entities" By Sandra McDuffy, MedicalMatters.org, 2010, http://www.medicalmatters.org/types-of-business.html (Accessed 4/7/15).
181 "The Reemergence of C Corporations" By Jacob Favaro, American Institute of CPAs, December 18, 2014, http://www.cpa2biz.com/Content/media/PRODUCER_CONTENT/Newsletters/Articles_2014/CorpTax/reemergence-of-C-corporations.jsp (Accessed 4/7/15).
182 "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/2005/1100/p42.pdf (Accessed 4/7/15) p. 44.

through to the shareholders and can offset their taxable income from other sources."[183] C corporations, on the other hand, see startup losses "trapped within the business" resulting in "no immediate benefit to the doctors."[184]

Hybrid Business Structures

Joint Ventures

Joint ventures resemble partnerships, but they differ in that they typically are limited-term agreements that practitioners often join for the purpose of engaging in one or several other transactions and, depending on the nature of the joint venture, may be comprised of corporate members, as well as individual physicians.[185]

Limited Liability Partnerships

LLPs are the only unincorporated businesses that offer protection from personal liability for the actions of other partners or physicians.[186] Although partners in an LLP are still personally liable for their own negligence, and up to their investment amount in the partnership, their personal assets and investments are protected from claims of negligence against another partner.[187]

Limited Liability Companies

LLCs offer the liability protection of a corporation but the taxation simplicity of a sole proprietorship or general partnership.[188] Typically, LLCs are structured like S corporations, but are allowed an unlimited number of shareholders.[189] This may be ideal for practices growing in size or expanding into multispecialty practices.[190] Additionally, LLCs have fewer restrictions on ownership than do S corporations, and they may be owned by another LLC, a corporation, or a trust.[191] However, because S corporations have a longer legal history than LLCs, case law has established more concrete rules for S corporation liabilities.[192] As such, the Internal Revenue Service is less wary of S corporations, as are shareholders who fear that LLC liability protection has not been tested adequately.[193]

183 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse. act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09).
184 Ibid.
185 "Buying, Selling, and Owning the Medical Practice: The Physician's Handbook to Ownership Options" By Matt Reiboldt, Norcross, GA: Coker Publishing LLC, 1996, p. 41.
186 "Choosing the Right Practice Entity" By Jeffrey Sansweet, American Academy of Family Physicians, 2005, http://www.aafp.org/fpm/2005/1100/p42.pdf (Accessed 4/7/15) p. 44.
187 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse. act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09.
188 "Starting a Solo Practice: Choice of Legal Entity" By Alan Matilsky and Lawrence Geller, American Academy of Ophthalmic Executives, http://www.aao.org/aaoe/ophthalmology-job-center-starting-a-solo-practice-part3.cfm (Accessed 4/7/15).
189 Ibid.
190 "S Corp, C Corp, LLC, LLP Which is Best?" By Dennis Murray, Medical Economics, March 5, 2004, http://license.icopyright.net/user/viewFreeUse. act?fuid=NDIxMzI4MA%3D%3D (Accessed 7/30/09.
191 Ibid.
192 Ibid.
193 Ibid.

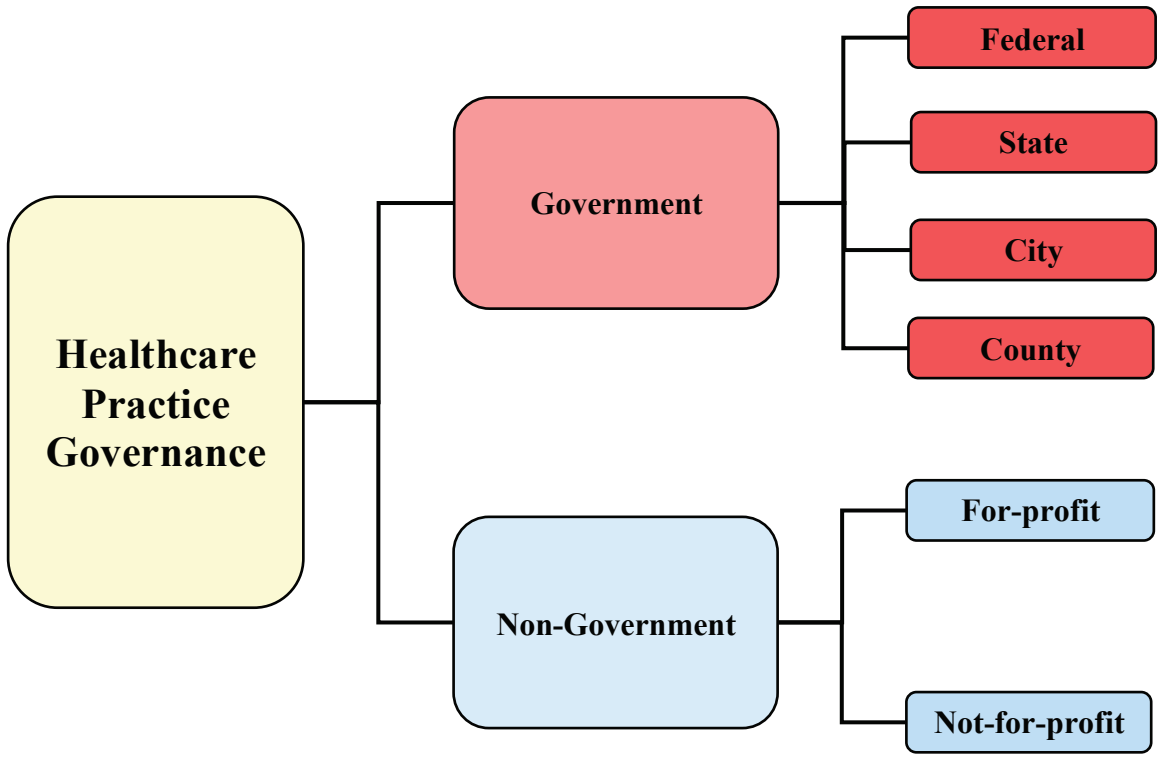
Professional Limited Liability Companies

PLLCs appear to be increasing in popularity. PLLCs offer practitioners protection from liability for the malpractice and negligence of others in the practice, without relieving the physicians of the liability for their own professional actions.[194]

GOVERNANCE

The governance of a healthcare organization can either be government-based or nongovernment-based (see Figure 5-3). The policies for a government-based healthcare practice are established by government agencies at the federal, state, city, or county level.[195] Municipal and county governments may collaborate to establish policy.[196] Additionally, hospital district control or authority control can be implemented under which entities within state, county, or city governments are tasked with establishing the medical policies for facilities.[197]

Figure 5-3: Healthcare Practice Governance



Source: "AHA Hospital Statistics," by the American Hospital Association, 2008, p. 213-224, 225-233.

Nongovernmental organizations can also control the policy development of a healthcare organization. Nongovernment hospitals can be either for-profit or nonprofit. Nonprofit hospitals

194 "Buying, Selling, and Owning the Medical Practice: The Physician's Handbook to Ownership Options" By Matt Reiboldt, Norcross, GA: Coker Publishing LLC, 1996, p. 43.
195 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 203.
196 Ibid, p. 225.
197 Ibid, p. 225.

may be controlled by not-for-profit organizations, such as religious organizations, fraternal societies, and other entities.[198]

CONSOLIDATED AND INTEGRATED HEALTHCARE PROFESSIONAL PRACTICE INFRASTRUCTURES

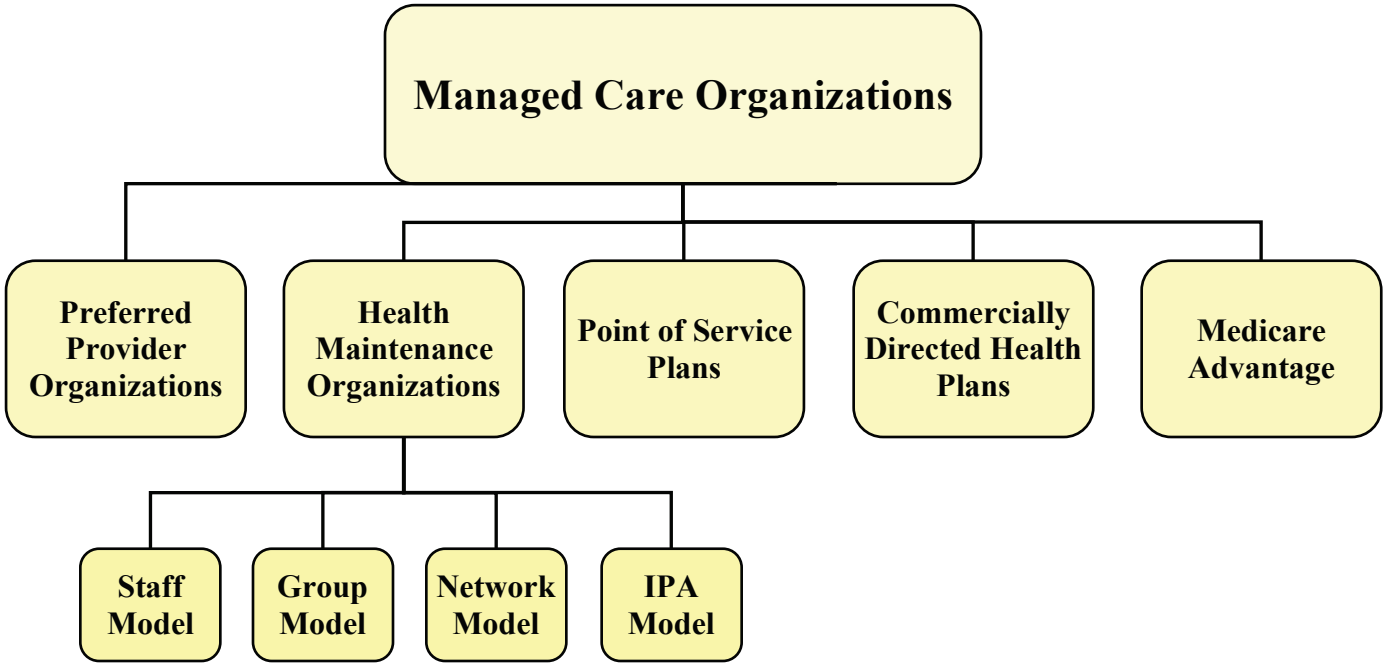
When determining the organizational structures of modern healthcare professional practices, it may be worth considering the different consolidation dynamics utilized by modern healthcare organization, such as *Managed Care Organizations (MCOs)* and other emerging models of integration.

MANAGED CARE ORGANIZATIONS

The structure of the medical practice has changed significantly under the influence of managed care. Historically, the healthcare delivery system was primarily hospital-based, and "procedures were performed without much regard for cost, consultations with specialists were frequent, and offering preventive advice was not a common practice."[199] Over time, advances in medical knowledge and technology, an aging demographic, a growing population, and, consequently, an increased incidence of certain chronic and infectious diseases have had a significant effect on recent market trends.[200] With the introduction of managed care plans, healthcare costs have increased due to advances in technology, market demand for a higher standard for prevention, and the emphasis on the continuum of care. The healthcare delivery system has shifted, resulting in a distribution of organizations with diverse infrastructures that have evolved to maximize use of not only inpatient and hospital-based resources but also outpatient and office-based capabilities.[201] The shift to managed care prompted an industry evaluation of the way that healthcare practices are organized.[202] A historically hospital-centric system has been transformed, placing the insurance industry's "*covered lives*" at the center of the delivery system.[203] Figure 5-4 represents five types of MCOs, highlighted in the following sections and discussed extensively in Chapter 2 of *An Era of Reform—The Four Pillars*: preferred provider organizations (PPOs), health maintenance organizations (HMOs), point-of-service (POS) plans, consumer-directed health plans (CDHPs), Medicare Advantage (MA).

198 "AHA Hospital Statistics" American Hospital Association, Chicago, IL: Health Forum LLC, 2008, p. 206.
199 "A Guide to Consulting Services for Emerging Healthcare Organizations" By Robert J. Cimasi, New York, NY: John Wiley & Sons, Inc., 1999, p. 24.
200 "Health Care USA: Understanding its Organization and Delivery" By Harry A. Sultz and Kristina M. Young, 6th Ed., Boston, MA: Jones and Bartlett Publishers, 2009, p. 19-27.
201 Ibid, p. 19-27, 102-104, 121-124, 129-133.
202 Ibid, p. 227.
203 Ibid, p. 100-101.

Figure 5-4: Managed Care Organizations



Source: "A Guide to Consulting Services for Emerging Healthcare Organizations," by Robert J. Cimasi, John Wiley & Sons, Inc., 1999.

CDHPs are most common among jumbo employers.[204]

EMERGING MODELS OF INTEGRATION

Healthcare reform has placed pressure through financial incentives on hospitals and physician practices to reduce costs while maintaining quality. Consequently, there has been a growing trend in consolidation, merger, integration, and affiliation of the services that these organizations provide.

The gradual transition into the managed and accountable care models has motivated healthcare consolidation among enterprises and practitioners into an assortment of emerging healthcare organizations (EHOs).[205] Although the application of these integrative methods will be addressed in Chapter 6: *Emerging Models*, the following sections will briefly discuss vertical and horizontal integration, physician integration, and EHOs.

Vertical Versus Horizontal Integration

The refocusing of healthcare business objectives, driven by healthcare reform initiative, has encouraged both vertical and horizontal integration. *Horizontal integration* "occurs when two or more similar providers… join forces."[206] This type of collaboration can help providers gain

204 "Mercer survey finds $1,000 health plan deductible was the norm in 2008: So what happens in next year's tough business environment?" by Marsh Mercer Kroll, November 19, 2008, www.mercer.com/summary.htm?idContent=1328445 (accessed September 23, 2009).
205 "Health Care USA: Understanding its Organization and Delivery" By Harry A. Sultz and Kristina M. Young, 6th Ed., Boston, MA: Jones and Bartlett Publishers, 2009, p. 240-242.
206 "The Value of Provider Integration" American Hospital Association, Trendwatch, March 2014, http://www.aha.org/content/14/14mar-provintegration.pdf (Accessed 4/7/15) p. 2.

economies of scale, eliminate duplicative services, and consolidate certain common functions like revenue cycle management.[207] Horizontally integrated organizations include collaborative hospital systems or physician organizations offering primarily physician services.[208] *Vertical Integration* is "integration of providers at different points along the continuum of care, such as a hospital partnering with a skilled nursing facility or a physician group,"[209] and can "facilitate lower costs and… better patient outcomes."[210]

Physician Integration

Physician integration and physician affiliation are key considerations for the implementation of EHO models by ACOs, MCOs, and emerging enterprises. One of the primary catalysts for physician integration may be to provide negotiating power for contracting with hospitals and MCOs.[211]

Provider integration is a potential threat to the reimbursement negotiating power of MCOs. Antitrust laws limit this threat within local markets, and, because healthcare is provided locally, these laws have been an effective safeguard for MCOs.[212] However, horizontal integrators, including independent practice associations, may exert the ability to negotiate favorable reimbursement rates for their providers[213] while simultaneously complying with antitrust laws, as set forth in Chapter 3: *Regulatory Environment* in *An Era of Reform—The Four Pillars*.

Emerging Healthcare Organizations

In addition to the various kinds of potential MCOs, business structures, and liabilities, the direction of integration influences the role of each *Emerging Healthcare Organization (EHO)* in the United States' changing healthcare system.

A variety of EHO models have been implemented in order to fulfill an increasingly diverse market demand. As figure 5-5 shows, EHOs can be classified fundamentally as either horizontal or vertical integrators. Additionally, they can be further classified based on their level of integration as resistors, cost containers, or true integrators. Seven major EHOs have been identified and categorized according to their level of integration: *independent practice associations (IPAs), physician-hospital organizations (PHOs), management services organizations (MSOs), physician practice management companies (PPMCs), fully integrated medical groups (FIMGs), integrated delivery systems (IDSs),* and, most recently, *accountable care organizations (ACO).* The various types of EHO models will be defined and discussed in Chapter 6: *Emerging Models*.

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207 Ibid.

208 "The Capitation Sourcebook: A Practical Guide to Managing At-Risk Arrangements" By Peter Boland, Berkely, CA: Boland Healthcare, Inc., 1996, p. 618.

209 "The Value of Provider Integration" American Hospital Association, Trendwatch, March 2014, http://www.aha.org/content/14/14mar-provintegration.pdf (Accessed 4/7/15) p. 2.

210 Ibid.

211 "How to Survive in Independent Practice" By Elaine Pofeldt, ModernMedicine Network, August 7, 2014, http://medicaleconomics.modernmedicine.com/medical-economics/content/tags/fighting-back/how-survive-independent-practice?page=full (Accessed 4/7/15).

212 "The Dynamics and Limits of Corporate Growth in Health Care" By James C. Robinson, Health Affairs, Vol. 15, No. 2, (Summer 1996) p. 157-158.

213 "How to Survive in Independent Practice" By Elaine Pofeldt, ModernMedicine Network, August 7, 2014, http://medicaleconomics.modernmedicine.com/medical-economics/content/tags/fighting-back/how-survive-independent-practice?page=full (Accessed 4/7/15).

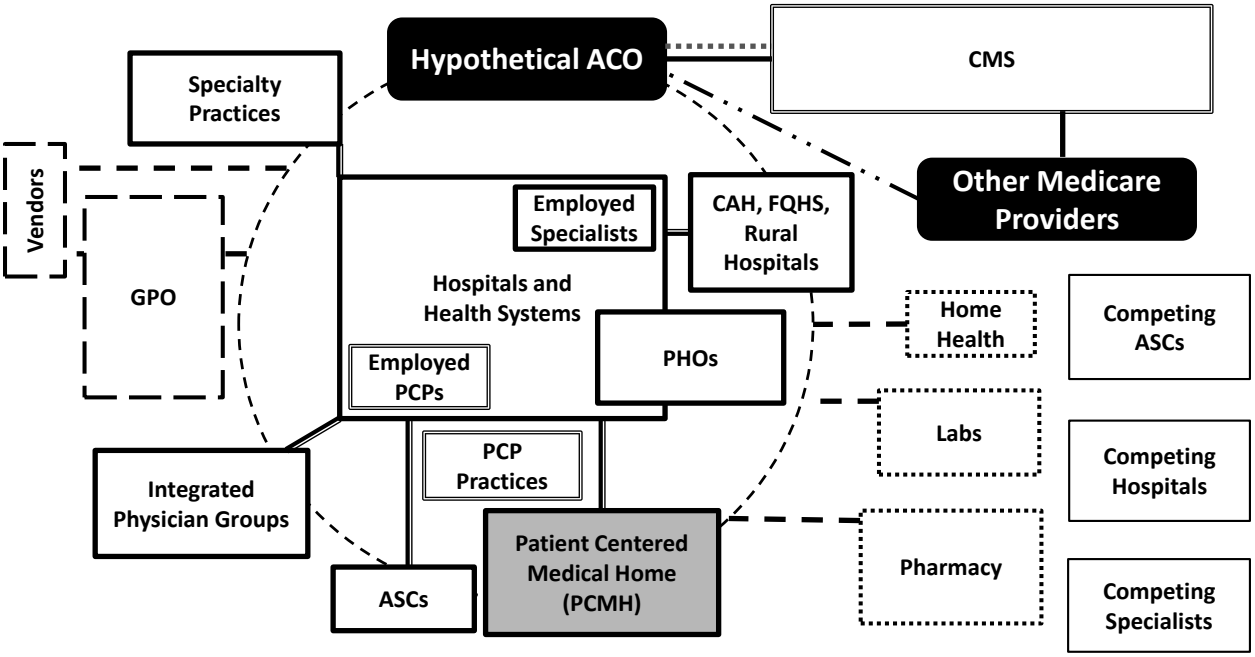
Figure 5-5: Classification of Emerging Healthcare Organizations

	Resistors	Cost Containers	True Integrators
Horizontal Integrators	Independent Practice Associations	Physician Practice Management Companies	Fully-Integrated Medical Groups
Vertical Integrators	Physician Hospital Organizations	Managed Service Organizations	Integrated Delivery Systems

Source: "A Guide to Consulting Services for Emerging Healthcare Organizations," by Robert J. Cimasi, John Wiley & Sons, Inc. 1999.

Of note is that ACO structures are more fluid than other types of EHOs, and may be classified as Cost Containers or True Integrators based on their strategy and alignment with participants. Figure 5-6, below, illustrates one example of how a Federal ACO may be structured. Further information regarding ACO models can be found in Chapter 6: *Emerging Models*, and Chapters 2 and 6 of *An Era of Reform—The Four Pillars.*

Figure 5-6: ACO with a Patient-Centered Medical Home



CONCLUSION

The healthcare industry incorporates a variety of facilities, sites of services, and business structures in the provision of healthcare-related services. In the following chapters, the various players and emerging models of organization that contribute to the competitive healthcare marketplace will be defined, described, and compared in light of industry projections. Specifically, understanding the relationships between physicians, allied health professionals, mid-level providers, technicians and paraprofessionals, and alternative medicine providers will be of significant utility when providing consulting services to businesses within the healthcare industry.

Key Sources

Source	Description	Citation	Website
United States Department of Health And Human Services (HHS) Office of Inspector General	The Office of the Inspector General of the HHS oversees all HHS programs in order to protect the integrity of the programs and the health and welfare of beneficiaries.	"Office of the Inspector General" U.S. Department of Health and Human Services, http://oig.hhs.gov (Accessed 4/1/15).	http://oig.hhs.gov
Department of Health and Human Services (HHS)	"HHS is the U.S. government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves."	"About HHS" Department of Health and Human Services, October 6, 2014, http://www.hhs.gov/about/ (Accessed 4/7/15).	www.hhs.gov
Outpatient Surgery	"Serves as a meeting place and a marketplace for decisionmakers in facilities where ambulatory surgery is done."	"Mission Statement" Outpatient Surgery, http://www.outpatientsurgery.net/about/mission (Accessed 4/7/15).	www.outpatient surgery.net
Government Accountability Office (GAO)	Referred to as the congressional watchdog, the GAO is an "independent, nonpartisan agency that works for Congress" to "investigate how the federal government spends taxpayer dollars."	"About GAO" U.S. Government Accountability Office, http://www.gao.gov/about/ (Accessed 4/1/15).	www.gao.gov
Medicare Payment Advisory Commission (MedPAC)	"An independent Congressional agency established by the Balanced Budget Act of 1997 (P.L. 105-33) to advise the U.S. Congress on issues affecting the Medicare program."	"About MedPAC" Medicare Payment Advisory Commission, http://www.medpac.gov/-about-medpac- (Accessed 4/1/15).	www.medpac.gov
Securities Exchange Commission (SEC)	"The mission of the U.S. Securities and Exchange Commission is to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation."	"The investor's Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation" Securities Exchange Commission, June 10, 2013, http://www.sec.gov/about/whatwedo.shtml#.VSQ7gNzF8k0 (Accessed 4/7/15).	www.sec.gov
The Henry J. Kaiser Family Foundation	"A non-profit, private operating foundation focusing on the major health care issues facing the U.S., as well as the U.S. role in global health policy."	"About the Kaiser Family Foundation" The Henry J. Kaiser Family Foundation, http://kff.org/about-us/ (Accessed 4/7/15).	www.kff.org

(continued)

Source	Description	Citation	Website
Journal of the American Medical Association (JAMA)	"JAMA is the most widely circulated medical journal in the world, with more than 320 000 recipients of the print journal, 1.2 million recipients of electronic tables of contents and alerts, and nearly 15 million annual visits to the journal's website."	"About JAMA" The Journal of the American Medical Association, http://jama.jamanetwork.com/public/about.aspx (Accessed 4/7/15).	http://jama.jamanetwork.com/journal.aspx
Mercer	"Mercer is a global consulting leader in talent, health, retirement, and investments. Mercer helps clients around the world advance the health, wealth, and performance of their most vital asset – their people."	"About Us" Mercer, http://www.mercer.com/about-us.html (Accessed 4/7/15).	www.mercer.com
Physician Hospitals of America (PHA)	"Offers support, advocacy, and educational services to the physician owned hospital industry, reflecting at all times the best interests of the patients, physicians, and other providers who play an inextricable and essential role in the provision of healthcare services."	"About PHA" Physician Hospitals of America, http://www.physicianhospitals.org/?page=About (Accessed 4/1/15).	http://www.physicianhospitals.org/
Department of Labor (DOL)	The mission of the DOL is "to foster, promote, and develop the welfare of the wage earners, job seekers, and retirees of the United States; improve working conditions; advance opportunities for profitable employment; and assure work-related benefits and rights."	"Our Mission" Department of Labor, http://www.dol.gov/opa/aboutdol/mission.htm (Accessed 4/7/15).	www.dol.gov

Associations

Type of Association	Professional Association	Description	Citation	Contact Information
National	American Hospital Association	"The national organization that represents and serves all types of hospitals, health care networks, and their patients and communities."	"About the AHA" American Hospital Association, 2015, http://www.aha.org/about/index.shtml (Accessed 4/1/15).	American Hospital Association 155 N. Wacker Dr. Chicago, IL 60606 Phone: 312-422-3000 www.aha.org
National	American Society for Aesthetic Plastic Surgery (ASAPS)	"Leading professional organization of plastic surgeons certified by the American Board of Plastic Surgery who specialize in cosmetic plastic surgery."	"About ASAPS" American Society for Aesthetic Plastic Surgery, 2015, http://www.surgery.org/consumers/about (Accessed 4/7/15).	www.surgery.org
National	American Medical Association	An association that "is dedicated to ensuring sustainable physiican practicse that result in better health outcomes for patients."	"Strategic Focus" American Medical Association, 2015, http://www.ama-assn.org/ama/pub/about-ama/strategic-focus.page? (Accessed 4/1/15).	American Medical Association AMA Plaza 330 North Wabash Ave., Suite 39300 Chicago, IL 60611-5885 Phone: 800-262-3211 www.ama-assn.org/

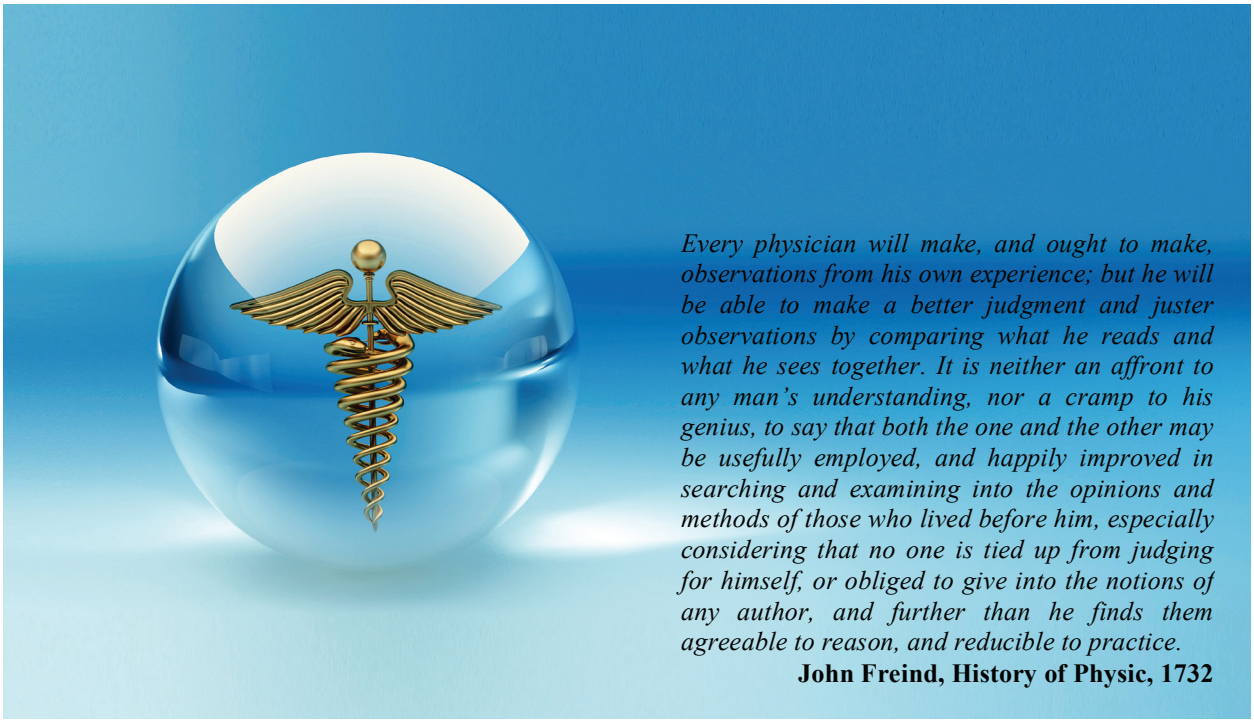
Type of Association	Professional Association	Description	Citation	Contact Information
National	American Osteopathic Association (AOA)	"Serving as the professional family for more than 110,000 osteopathic physicians (D.O.s) and osteopathic medical students, the AOA promotes public health and encourages scientific research. In addition to serving as the primary certifying body for DOs, the AOA is the accrediting agency for all osteopathic medical schools and has federal authority to accredit hospitals and other health care facilities."	"About the AOA" American Osteopathic Association, http://www.osteopathic.org/inside-aoa/about/Pages/default.aspx (Accessed 4/7/15).	American Osteopathic Association 142 East Ontario Street Chicago, IL 60611 Phone: 800-621-1773 or 312-202-8000 Fax: 312-202-8200 E-mail: info@osteopathic.org www.osteopathic.org
National	Ambulatory Surgery Center Association	"The national membership association that represents ambulatory surgery centers and providers advocacy and resources to assist ASCs in delivering high quality, cost-effective ambulatory surgery to all the patients they serve."	"Mission" Ambulatory Surgery Center Association, 2015, http://www.ascassociation.org/Mission (Accessed 4/1/15).	Ambulatory Surgery Center Association 1012 Cameron St Alexandria, VA 22314 Phone: 703-836-8808 Fax: 703-549-0976 E-mail: ASC@ascassociation.org http://ascassociation.org
National	Society of Hospital Medicine (SHM)	"The Society of Hospital Medicine (SHM) is a professional medical society representing more than 13,000 of the 44,000 practicing hospitalists in the U.S. dedicated to providing exceptional care to the hospitalized patient."	"About SHM" Society of Hospital Medicine, 2015,http://www.hospitalmedicine.org/Web/About_SHM/About_SHM/About_SHM_Landing_Page.aspx?hkey=fea27f96-d2dc-419b-b0ea-48d9e7ddb09c (Accessed 4/17/15).	Society of Hospital Medicine 1500 Spring Garden Suite 501 Philadelphia, PA 19130 Phone: 800-843-3360 E-mail: webmaster@hospitalmedicine.org www.hospital medicine.org
National	America's Health Insurance Plans	"The national association representing the health insurance industry."	"About Us" America's Health Insurance Plans, 2015, https://www.ahip.org/about/ (Accessed 4/1/15).	American Health Insurance Plans 601 Pennsylvania Avenue, NW South Building Suite 500 Washington, DC 20004 Phone: 202-778-3200 E-mail: ahip@ahip.org www.ahip.org

(continued)

Type of Association	Professional Association	Description	Citation	Contact Information
National	American Academy of Medical Colleges (AAMC)	The AAMC "represent[s] all 141 accredited U.S. and 17 accredited Canadian medical schools; approximately 400 major teaching hospitals and health systems, including 51 Department of Veterans Affairs medical centers; and nearly 90 academic and scientific societies. Through these institutions and organizations, the AAMC represents 148,000 faculty members, 83,000 medical students, and 115,000 resident physicians."	"About the AAMC" American Academy of Medical Colleges, https://www.aamc.org/about/ (Accessed 4/2/15).	American Academy of Medical Colleges 655 K Street, NW, Suite 100 Washington, DC 20001-2399 Phone: 202-828-0400 www.aamc.org

Chapter 6

Emerging Models



Every physician will make, and ought to make, observations from his own experience; but he will be able to make a better judgment and juster observations by comparing what he reads and what he sees together. It is neither an affront to any man's understanding, nor a cramp to his genius, to say that both the one and the other may be usefully employed, and happily improved in searching and examining into the opinions and methods of those who lived before him, especially considering that no one is tied up from judging for himself, or obliged to give into the notions of any author, and further than he finds them agreeable to reason, and reducible to practice.

John Freind, History of Physic, 1732

KEY TERMS

Accountable Care Organization
Comprehensive or "Turnkey" Model
Cost Containers
Emerging Healthcare Organization
Fully Integrated Medical Group
Horizontal Integration
Independent Practice Associations (IPAs)
Integrated Delivery Systems
Integration
Joint-Venture, Hospital, or Physician-Owned MSOs
Management Services Bureau or "Low-Tech" Model
Management Services Organization (MSO)
Physician Hospital Organizations
Physician Investor-Owned MSOs
Physician Practice Management Companies
Resistors
System-Owned MSOs
True Integrators
Vertical Integration

Key Concept	Definition	Citation	Concept Mentioned on Page #
Drivers of Emerging Trends in Healthcare	(1) population trends, (2) transitions in the nature of healthcare professional practices, and (3) healthcare reform	n/a	268–269
Types of Integration	(1) vertical and (2) horizontal	"The Value of Provider Integration" American Hospital Association, Trendwatch, March 2014, http://www.aha.org/content/14/14mar-provintegration.pdf (Accessed 4/7/15), p. 2.	276–278
Integration strategies in:	(1) funding, (2) administration, (3) organization, (4) the delivery of services, and (5) clinical dynamic	"Integrated Care: Meaning, Logic, Applications, and Implications—A Discussion Paper" By Dennis L. Kodner and Cor Spreeuwenberg, International Journal of Integrated Care, Vol. 2, November 14, 2002, p. 3.	278–279
Levels of integration	(1) resistors, (2) cost containers, and (3) true integrators		280
Types of Resistors	(1) independent practice associations and (2) physician hospital organizations	"Health Care Administration: Planning, Implementing and Managing Organized Delivery Systems," by Lawrence F. Wolper, Jones and Bartlett Publishers, Inc., 2004, p. 558.	281
Types of Cost Containers	(1) physician practice management companies and (2) management services organizations (MSOs)	"Essentials of Managed Health Care," by Peter R. Kongstvedt, Jones and Bartless Publishers, 2003, p. 36–38; "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians," by Fred McCall-Perez, PhD, The Healthcare Financial Management Association, 1997, p. 45.	284
Types of True Integrators	(1) fully integrated medical groups and (2) integrated delivery systems	"Healthcare Integration: A Legal Manual for Constructing Integrated Organizations," by Gerald R. Peters, Esq., National Health Lawyers Association, 1995, p. 10, 27, 235; "The Holographic Organization," by Stephen M. Shortell, et al., Healthcare Forum Journal, Vol. 36, No. 2, (1993), p. 20–26.	292
Concierge Care Model	For an annual retainer fee—either bolstered by or independent of the cost of insurance—"patients can expect more personalized services, including twenty-four hour doctor access, coordinated referrals to specialists, online access to their medical records, same day appointments, and longer appointment times."	"Is Boutique Medicine a New Threat to American Health Care or a Logical Way of Revitalizing the Doctor-Patient Relationship?" By Jennifer Russano, Journal of Law and Policy, Vol. 17 (2005), http://law.wustl.edu/Journal/17/p313%20Russano%20book%20pages.pdf (Accessed 08/04/09), p. 321.	295–296

Key Concept	Definition	Citation	Concept Mentioned on Page #
Retail Clinic Model	These "convenient care clinics" are located in pharmacy, discount, or grocery retail chains and often are staffed by nurse practitioners or physician assistants.	"Retail Clinics, Primary Care Physicians, and Emergency Departments: A Comparison of Patients' Visits" By Ateev Mehrotra, et al., Health Affairs Vol. 27, No. 5, September/October 2008, p. 1272; "Retail Clinics: An Emerging Source of Health Care for Children" By C.S. Mott Children's Hospital, et al., C.S. Mott Children's Hospital National Poll on Children's Health, Vol. 4, No. 3, August 11, 2008, p. 1.	296–298
Medical Home Model	The medical home model empowers practices to promote primary and preventive care services (which are a growing focus in the modern healthcare market) in an effort to maximize efficiency through the efficient utilization manpower resources, particularly independent non-physician practitioners, and the reevaluation of the role of specialty medicine including eliminating the overuse of specialty services.	"American Medical Home Runs: Four Real-Life Examples That Show a Better Way to Substantial Savings" By Arnold Milstein and Elizabeth Gilbertson, Health Affairs, Volume 28, Number 5, September/October 2009, p. 1319-1322.	298
Bundled Payment Model	The Centers of Medicare and Medicaid Services (CMS) has launched a pilot program utilizing the bundled payment model, called the Acute Care Episode (ACE) Demonstration project, to assess the bundling of payments received for both physician and hospital services for certain episodes of cardiovascular or orthopedic care.	"Acute Care Episode Demonstration Fact Sheet" Centers for Medicare and Medicaid Services, March 20, 2009, http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/ACEFactSheet.pdf (Accessed 06/01/09).	299
Co-Management	Co-management involves arrangements where hospitals engage physicians to manage the daily operation of certain hospital specialty service lines.	"A Guide to Physician Integration Models for Sustainable Success," American Hospital Association, September 2012, http://www.hpoe.org/Reports-HPOE/guide_to_physician_integration_models_for_sustainable_success.pdf (Accessed 5/19/2014), p 17; "What in the World is Medical Co-Management?" By John Erickson, Physicians Practice, October 14, 2011, http://www.physicianspractice.com/blog/what-world-medical-%E2%80%98co-management%E2%80%99 (Accessed 4/8/15).	300
Accountable Care Organization	The American Medical Group Association (AMGA) defines an ACO as "…an entity that has physician leadership and internal structures, methods and systems for measuring, assessing and advancing the effectiveness and efficiency of patient care; providing a longitudinal, coordinated continuum of health care services, crossing provider settings and that is willing to be held accountable for the clinical results to the communities served."	"Accountable Care Organizations: Lynchpin for Reform" American Medical Group Association, 2009, http://www.amga.org/advocacy/briefs/2009/aco.pdf (Accessed 12/15/09).	300–301

OVERVIEW

Marcus Welby, M.D. is dead—not just the popular television series of the 1960s and 1970s—but also the entirety of the *"cottage industry"* comprising the independent practice of medicine (see Chapter 1 and Chapter 3 of *An Era of Reform—The Four Pillars*). The collapse of the independent medical practice may be attributed to any number of industry drivers. Market changes in recent years have been instrumental in the demise of the solo or small group practice. In addition to adopting new business structures in response to the evolving marketplace, practices have responded to changes in the healthcare industry by abandoning their traditional management systems to seek out strategies that better meet the demands of the market. In order to remain efficient and viable in a changing and volatile healthcare environment, practices are making significant transitions through expansion, acquisition, sale, divestiture, merger, and other changes in ownership structure.

> Marcus Welby, M.D. is a show from 1969 about "Marcus Welby, a general practitioner and Steven Kiley, Welby's young assistant...who try to treat people as individuals in an age of specialized medicine and uncaring doctors."[1]

Practice transitions are not without risks. However, they may also cultivate potential opportunities for owners of healthcare professional practice enterprises.[2] Mergers, acquisitions, sales, and divestitures are not simply the transfer of a business interest at a mutually agreed upon price; they also represent the redistribution of resources that is essential to the ongoing success (or failure) of the healthcare practice,[3] as well as the healthcare industry. As practices transition to emerging organizational models, opportunities will arise for consultants to assist healthcare professional practices in making these critical decisions.

This chapter defines the drivers of market trends and transitions in healthcare and describes the *emerging healthcare organizations (EHOs)* that healthcare providers continue to build in response to market changes. This chapter also discusses the EHOs that have surfaced as a result of the most recent evolution of healthcare challenges arising from the current era of healthcare reform.

DRIVERS OF EMERGING TRENDS IN HEALTHCARE

The healthcare economic environment is largely a product of: (1) trends in the demographics and health outcomes of the U.S. population, (2) transitions in the healthcare workforce and professional practice dynamic, and (3) the impact of healthcare reform. The interplay of these factors will define the roadmap for the future development of EHOs, as recent and anticipated

1 "Marcus Welby M.D.," Internet Movie Database, www.imdb.com/title/tt0063927/plotsummary (accessed March 4, 2010).
2 "Healthcare Transactions: A Description of the Process and Considerations Involve" By Robert J. Cimasi, Health Capital Consultants, p. 1.
3 Ibid.

workforce and population trends have led the U.S. healthcare system to significant reform, particularly in the areas of quality, access, cost, and regulation.

POPULATION TRENDS

Demographic Climate

The healthcare implications of an aging U.S. population are significant across all sectors of the healthcare professional workforce. The U.S. population aged 65 and over has increased from 35.5 million in 2002 to 43.1 million in 2012 (a 21% increase) and is projected to increase to 79.7 million in 2040 (a 186% increase from 2012), at which time it is expected that 21% of the total U.S. population will be aged 65 and older.[4] Further, trends in quality of care, paired with trends in nutrition and safety, have led to increases in life expectancies.[5] Projections suggest that the U.S. population aged 85 and older is projected to triple from 5.9 million in 2012 to 14.1 million in 2040.[6] The volume and types of services demanded by this growing subset of the population will have a significant effect on the future viability and success of healthcare professional practice enterprises.

Epidemiological Demand

As discussed in Chapters 1 and 6 of *An Era of Reform—The Four Pillars*, health outcomes that are prevalent among the elderly population differ significantly from the health concerns of the younger demographic. Accordingly, the growing number of aging Americans will drastically influence trends in healthcare demand. Increased life expectancy suggests increased prevalence of chronic conditions common among the elderly.[7] While cancer, heart disease, diabetes, and other chronic illnesses are of significant concern for Americans across all age groups, the prevalence of two or more chronic conditions among adults aged 65 and older is more than double than that of adults aged 45-64.[8] Though unintentional injuries are among the leading causes of death for all age groups, elderly individuals are more likely to suffer and endure complications from acute injuries (for example, falls) and illnesses (for example, pneumonia as a complication from influenza). In fact, almost 16% of Americans aged 65 and over required hospitalization in 2012 (compared to 5.4% of Americans aged 1-64).[9] Similarly, the value of the worldwide pharmaceutical market projected to reach $1.017 trillion by 2020, "…equating to an average growth of 5.1% per year from 2013 to 2020."[10]

4 "A Profile of Older Americans: 2013" Administration on Aging Administration for Community Living, Washington, DC: U.S. Department of Health and Human Services, 2013, p. 3.

5 "Health, United States, 2008 With Special Feature on the Health of Young Adults" National Center for Disease Statistics, U.S. Department of Health and Human Services, March 2009, http://www.cdc.gov/nchs/data/hus/hus08.pdf#120 (Accessed 09/11/09), p. 3.

6 "A Profile of Older Americans: 2013" Administration on Aging Administration for Community Living, Washington, DC: U.S. Department of Health and Human Services, 2013, p. 3.

7 "Health, United States, 2008 With Special Feature on the Health of Young Adults" National Center for Disease Statistics, U.S. Department of Health and Human Services, March 2009, http://www.cdc.gov/nchs/data/hus/hus08.pdf#120 (Accessed 09/11/09), p. 3.

8 "Multiple Chronic Conditions Among Adults Aged 45 and Over: Trends Over the Past 10 Years" Virginia M. Freid et al., Centers for Disease Control and Prevention, http://www.cdc.gov/nchs/data/databriefs/db100.htm#age (Accessed 3/31/15), p. 2.

9 "Health, United States, 2013, With Special Feature on Prescription Drugs" National Center for Disease Statistics, U.S. Department of Health and Human Services, May 2014, Accessed at http://www.cdc.gov/nchs/data/hus/hus13.pdf (Accessed 03/31/2015) p. 294.

10 "World Preview 2014,Outlook to 2020" EvaluatePharma,. http://info.evaluategroup.com/rs/evaluatepharmaltd/images/EP240614.pdf (Accessed 03/31/2015), p. 3.

The increasing supply of assisted living facilities, in contrast to the decreasing number of nursing homes, further emphasizes the fact that while the number of elderly Americans is increasing, quality of preventive care has improved, patient awareness has increased, and social emphasis on prevention of acute incidents has solidified. In addition, the scope of outpatient procedures continues to broaden, which has contributed to a shortened average length of inpatient hospital stays among those aged 65 or older from 10.7 in 1980 to 5.6 in 2010.[11]

TRANSITIONS IN THE NATURE OF HEALTHCARE PROFESSIONAL PRACTICES

Workforce Transitions

As illustrated in Chapter 1 of *An Era of Reform—The Four Pillars*, trends in healthcare professional manpower are largely influenced by demographic and epidemiologic trends. Consequently, these factors may shape the foundational elements that healthcare organizations may seek to integrate into their existing infrastructure in order to enhance their ability to thrive in the changing healthcare marketplace.[12]

Patient Demographic Transitions

The impact of the shifting demographic make-up of the healthcare workforce is a ubiquitous concern for all healthcare professionals and looms most heavily over the physician population (see Chapters 1 and 6 of *An Era of Reform—The Four Pillars* and Chapter 7: *Physician Practices*).[13] The ongoing physician manpower shortage is attributed to not only the aging workforce, but also to the anticipated growth in demand for health care services arising from the shifting patient demographics and trends in health outcomes.[14] In addition to the debilitating physician shortage, the allocation of existing manpower is inconsistent with the distribution of demand.[15]

Demographic changes within the physician population have also contributed to the evolving medical practice trends. Specifically, the growing number of female physicians, paired with the demand for better lifestyles and improved workplace conditions, has altered the practice dynamic and redefined practitioner demand to include, among other, things resistance to call coverage, an interest in less strenuous and more flexible specialty areas, and a growing number of part-time physicians (see Chapter 4 of *An Era of Reform—The Four Pillars,* as well as Chapter 5: *Organizational Structure* and Chapter 7: *Physician Practices*). Although physician professional obligations have traditionally resulted in long hours for physicians, medical professionals increasingly are seeking a more balanced lifestyle.[16] Most millennial physicians seek a favorable

11 "Health, United States, 2013, With Special Feature on Prescription Drugs" National Center for Disease Statistics, U.S. Department of Health and Human Services, May 2014, Accessed at http://www.cdc.gov/nchs/data/hus/hus13.pdf (Accessed 03/31/2015) p. 300.
12 "The Impact of the Aging Population on the Health Workforce in the United States" Center for Health Workforce Studies, Resselaer, NY: Health Resources and Services Administration, 2005, p. 12.
13 Ibid, p. 13.
14 "The Complexities of Physician Supply and Demand: Projections Through 2025" Center for Workforce Studies of the Association of American Medical Colleges, http://www.aamc.org/workforce (Accessed 05/06/10), p. 7, 47, 56.
15 "The Complexities of Physician Supply and Demand: Projections Through 2025" By Michael Dill and Edward Salsberg, Center for Workforce Studies of the Association of American Medical Colleges, November 2008, http://www.aamc.org/workforce (Accessed 05/06/10), p. 7.
16 "Partners in Change: Physicians and Hospitals Aligning for Success" By Deborah Popely, Healthcare Executive, July/August 2009, p. 10.

work-home balance and increased flexibility in their professional schedules.[17] Female physicians, many of whom may be younger women with children, may be particularly motivated to pursue flexible work schedules.[18] Accordingly, the growing proportion of women in the physician workforce (about 32% of physicians and surgeons in the United States are women, up from 9.7% in 1970 and 26.8% in 2000) may suggest an increase in the number of part-time physicians.[19]

Transitions in the Intra-Professional Workforce Dynamic

In a delivery system historically driven by physician professionals, the trend in physician supply may be cause for a continued reassessment of the healthcare workforce. Improved integration of physician *and* non-physician professionals may be necessary to efficiently and effectively address the healthcare needs that the dwindling physician population is no longer equipped to satisfy.[20] While all healthcare professional populations are projected to endure the burden of an aging workforce, the supply of various mid-level providers, technicians, and paraprofessionals have shown annual growth and are projected to continue to increase. In fact, it is projected that "the supply of primary care nurse practitioners will increase by 30%, from 55,400 in 2010 to 72,100 in 2020, and the supply of primary care physician assistants is projected to increase by 58%, from 27,700 to 43,900 over the same period."[21]

PRACTICE TRANSITIONS

Changes in market supply and demand for medical services have also fueled the diversification of healthcare professional practices. As explained in Chapter 5: *Organizational Structure*, the competitive market has changed significantly in response to the favorable expansion of services reasonably within the scope of office-based practices, that is, free-standing facilities providing diagnostic, therapeutic, or surgical services. The ongoing impact of this market transition, and the following industry trends on hospital-based practices, will be of continued significance for all market players.[22]

Attack on Niche Providers

Technological advances have made it possible for more procedures to be provided on an outpatient basis.[23] The advent of managed care, followed by healthcare reform initiatives and drastic changes to Medicare reimbursement for professional services, has forced providers to look for ways to generate the more lucrative ancillary services and technical component (ASTC)

17 "Wanting It All: A New Generation of Doctors Places Higher Value on Work-Life Balance" By Eve Glicksman, Association of American Medical Colleges, May 2013, https://www.aamc.org/newsroom/reporter/336402/work-life.html (Accessed 4/7/2015).
18 "Part-Time Medical Practice: Where is it Headed?" By Julia E. McMurray et. al., APM Perspectives, Vol. 118, No. 1 (Jan. 2009), p. 87, 89.
19 "Women now make up one-third of physician workforce" The Advisory Board, December 16, 2012, http://www.advisory.com/daily-briefing/2012/12/06/women-now-make-up-one-third-of-physician-workforce (Accessed 3/31/15).
20 "The Complexities of Physician Supply and Demand: Projections Through 2025" Center for Workforce Studies of the Association of American Medical Colleges, http://www.aamc.org/workforce (Accessed 05/06/10), p. 8.
21 "Projecting the Supply and Demand for Primary Care Practitioners Through 2020" U.S. Department of Health and Human Services, Health Resources and Services Administration, National Health Professions National Center for Health Workforce Analysis, November 2013, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/projectingprimarycare.pdf (Accessed 3/31/15), p. 2.
22 "The Complexities of Physician Supply and Demand: Projections from 2013 to 2015" IHS, Association of American Medical Colleges, March 2015, https://www.aamc.org/download/426242/data/ihsreportdownload.pdf (Accessed 4/7/2015), p. viii.
23 "Surgery Centers and Specialty Hospitals" Triple Tree Spotlight Report, Vol. 6, No. 2, May 2003, p. 10.

revenue streams.[24] As a natural reaction to these dramatic changes, a number of practitioners are investing in the ownership of specialized inpatient and outpatient facilities wherein they may be compensated for medical services that contribute to both professional and ASTC revenue streams.[25]

Ownership, in contrast to employment, increases physician autonomy and control over professional work environment, work schedule, and clinical practice, with physicians motivated to invest in specialty and niche facility ownership,[26] not only to obtain better lifestyles, but also to offset the financial effects of downshifting trends in physician reimbursement. Though the 1990s were marked by increased compensation across most professions, trends in physician compensation were held abeyant.[27] By investing in ownership of facilities providing specialty and niche services, physicians may be attempting to counter stagnant compensation trends due to cost containment strategies of managed care and the changes in Medicare professional services payment levels.[28]

Although some stakeholders maintain that specialty and niche providers pose a threat to the traditional healthcare delivery system,[29] others believe that these emerging enterprises embrace innovative methods of healthcare delivery that may prove to be cost-effective and simultaneously promote enhanced quality and outcomes.[30] Despite the potential benefits associated with competition in the healthcare industry, general acute care hospitals have expressed concern that specialty and niche providers engage in *cherry picking* and *cream skimming* of the most profitable patients and procedures, thereby reducing the profit opportunities for general acute care hospitals that have state and local regulatory requirements for providing services regardless of profitability. In response to these fears, general acute care hospitals have engaged in a lobbying campaign to limit specialty and niche providers at the local, state, and federal levels.[31] The hospital industry also appears to be using its negotiating strength to influence insurance companies to exclude these providers from their networks[32] and to inform the public regarding their concerns related to the failure of local general acute care hospitals,[33] which efforts have portrayed physicians from privately held professional practices in a negative light.[34]

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24 "Enhancing the Bottom Line—Considerations in Developing Ancillary Services" By Darrell L. Schryver and Bruce A Johnson, Directions Newsletter, Vol. 5, No. 2 (2003), http://www.mgma.com/article.aspx?id=1142 (Accessed 2/3/10); "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6, November/December 2007, p. 1591.

25 "Attack on Physician Ownership of Ancillary Services Enterprises: Update on Regulatory Environment for Orthopedic Providers" By Robert James Cimasi, Texas Orthopedic Association 2009 Socioeconomic Summit: Austin, TX, 1/31/2009, p. 1-2.

26 "The Attack on Niche Providers" By Robert J. Cimasi, American Association of Ambulatory Surgery Centers 27th Annual Meeting: Reno, Nevada March 11, 2005, p. 13.

27 "Attack on Physician Ownership of Ancillary Services Enterprises: Update on Regulatory Environment for Orthopedic Providers" By Robert James Cimasi, Texas Orthopedic Association 2009 Socioeconomic Summit: Austin, TX, 1/31/2009, p. 1.

28 "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6, November/December 2007, p. 1591; "Enhancing the Bottom Line—Considerations in Developing Ancillary Services" By Darrell L. Schryver and Bruce A Johnson, Directions Newsletter, Vol. 5, No. 2 (2003), http://www.mgma.com/article.aspx?id=1142 (Accessed 2/3/10).

29 "Specialty-Service Lines: Salvos in the New Medical Arms Race" By Robert Berenson et al, Health Affairs, 7/26/2006, p. w337.

30 "Economic and Policy Analysis of Specialty Hospitals" By John E. Schneider et al., Health Economics Consulting Group, February 4, 2005, p. 14.

31 "The Attack on Ancillary Service Providers at the Federal and State Level" By Robert James Cimasi, Orthopedic Clinics of North America, Vol. 39, No. 1, 2008, p. 108-109, 117.

32 "The Attack on Ancillary Service Providers at the Federal and State Level" By Robert James Cimasi, Orthopedic Clinics of North America, Vol. 39, No. 1, January 2008, p. 103.

33 Ibid.

34 Ibid.

The American Hospital Association, representing nonprofit hospitals, and the Federation of American Hospitals, representing investor-owned for-profit hospitals, have also conducted lobbying campaigns against physician-owned hospitals,[35] which are comprised of efforts to limit the exceptions to the Stark laws and anti-kickback statute for limited service providers.[36] In order to protect arrangements that have demonstrated positive effects on the healthcare industry and pose little or no risk of abuse, the United States Congress has elicited certain exceptions to its fraud and abuse regulations.[37] For more information, see Chapter 3 in *An Era of Reform—The Four Pillars* and Chapter 7: *Physician Practices*.

Transition from Solo and Small Group Practice to Large Group Practice

The changes brought on by the shift toward managed care and the advent of healthcare reform have also encouraged office-based physicians to move away from solo or small group practices and show greater affinity for larger and more diverse practice types.[38] The percentage of physicians in solo or two-physician practices has been in steady decline over the past two decades.[39] The tradition of solo and small group medical practices that accept fee-for-service reimbursement is giving way to larger group practices and networks that have increased leverage in negotiation of managed care contracts and accept bundled payment arrangements.

Transition from Single-Specialty Practice to Multispecialty Practice and Back to Single-Specialty Practice

Triggered by managed care and healthcare reform initiatives, the continued emphasis on the comprehensive provision of care across the care continuum has resulted in heightened competition within the healthcare industry. Multispecialty organizations that strive to broaden their scope of practice, while maintaining managerial and administrative control, may be more favorable than single-specialty enterprises that offer a limited range of services.[40] By offering an increasingly comprehensive continuum of care without compromising efficiency and structure, these practices are maximizing their market control; as such, projections suggest that large, multispecialty practices will continue to flourish.[41]

However, fluctuations in reimbursement during the past two decades may have also led physicians to transition from multispecialty practices to larger, single-specialty practices with lucrative ancillary service lines, resulting in a[42] "…growing trend of physician-owned outpatient

35 "Letter to the Congress Regarding Physician Owned Hospitals" Federation of American Hospitals and American Hospital Association, 2/26/2015, http://www.fah.org/fahCMS/Documents/On%20The%20Record/Congressional%20Communications/FAH-AHA%20Letter%20to%20Congress%20re%20specialty%20hospitals.pdf (Accessed 4/7/2015).

36 "Down on the Farm: The Attack on Physician Ownership" By Robert James Cimasi, SurgiStrategies, May 1, 2008, http://www.surgistrategies.com/articles/physician-ownership-law-asc-cimasi.html# (Accessed 10/08/09).

37 "Exceptions" 42 C.F.R. § 1001.952 (2013); for a list of exceptions, see Chapter 3 of *An Era of Reform—The Four Pillars*.

38 "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6, November/December 2007, p. 1587, 1589, 1590, 1593, 1596.

39 "Physician Practices: Background, Organization, and Market Consolidation" By Suzanne M. Kirchhoff , Congressional Research Service, January 2, 2013, https://www.fas.org/sgp/crs/misc/R42880.pdf (Accessed 3/31/15) p. 8.

40 "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6, November/December 2007, p. 1587, 1589, 1590, 1593, 1596.

41 Ibid.

42 "Physicians Moving to Mid-Sized, Single-Specialty Practices" By Allison Liebhaber and Joy M. Grossman, Center for Studying Health System Change, Tracking Report No. 18 (August 2007), p. 2.

facilities [which] provided for opportunities for additional physician revenue."[43] Although the rise of managed care led to the emergence of large, multispecialty groups to share risk and negotiate with health plans, in a fee-for-service reimbursement environment, procedure- and service-intensive specialties saw heightened opportunities to enhance their revenue generating capabilities by moving to single-specialty practices.[44] Large, single-specialty practices that provide a comprehensive spectrum of services within their areas of expertise tend to maintain a geographic *and* procedural competitive advantage over their less inclusive counterparts.[45] Additionally, single-specialty practices have strengthened their leverage in health plan negotiations while multispecialty groups have seen their bargaining positions weaken.[46]

Transition through Joint Ventures and Affiliations

There has been a dramatic acceleration in acquisitions and consolidations, as well as divestitures, dissolutions, and financial restructurings of prominent healthcare provider organizations in almost every segment of the U.S. industry in recent years. The inability of organizations to manage components of their business enterprise outside of their historical, horizontal management sphere has been cited as the cause of failure in many cases. Many organizations that originally employed vertical integration strategies to enhance their market advantage are now divesting themselves of these acquired organizations and service lines due to financial losses, increased operational inefficiency, as well as difficulty in aligning incentives, among other reasons. However, any potential move toward "dis-integration" should also be considered carefully to avoid the potential damage of further costly organizational disruption.

For example, although organizations are still engaging in practice acquisition, they are being more attentive to increasing regulatory scrutiny.[47] In light of that changing regulatory milieu, hospitals, health systems, and other integrators are also employing alternate integration strategies, for example, affiliation, collaboration, co-management, and joint marketing arrangements.[48] In addition, the impacts of the recent healthcare reform may re-ignite the move toward agglomeration within the healthcare industry through more collaborative, but possibly less integrated, structures, such as Accountable Care Organizations (ACOs) and reimbursement strategies based upon population health rather than strictly fee for service.

Transition from Independently Owned Practices to Practices Owned or Controlled by Hospitals

Independently owned physician practices were characteristic of the traditional U.S. "cottage" healthcare industry. However, the U.S. healthcare delivery system has seen an increasing prevalence of corporatized medicine, and the role of independently owned physician practices

43 Ibid.
44 Ibid.
45 "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6, November/December 2007, p. 1586, 1590-1592.
46 "Physicians Moving to Mid-Sized, Single-Specialty Practices" By Allison Liebhaber and Joy M. Grossman, Center for Studying Health System Change, Tracking Report No. 18 (August 2007), p. 3.
47 See Chapter 3 in *An Era of Reform—The Four Pillars*.
48 "Healthcare Transactions: A Description of the Process and Considerations Involved" By Robert J. Cimasi, Health Capital Consultants, p. 6.

has declined steadily. A recent study reported that, from 1984 to 2009, the percentage of U.S. medical specialists who own their practice has declined approximately 2% per year.[49]

The decline in the number of independent practices appears to be driven primarily by increasing regulatory efforts to control rising healthcare costs.[50] However, research also attributes the decline, in part, to the fact that hospitals are purchasing profitable independent specialty practices to "enhance their bottom line."[51] Large corporate- and hospital-owned systems are attractive employment opportunities for independent physicians, offering higher salaries, loan forgiveness programs, and little administrative responsibility.[52] Additionally, increasingly complex treatments, the high costs associated with implementing technological advancements, and physician desire for more flexible working hours have all contributed to the decline of the independent practice.[53] As the demand for physician manpower (as well as technical and technological expertise) increases, workforce and workplace diversification, sophistication, and expansion is likely to continue, and the dynamics of the successful healthcare organization may change as a result.

HEALTHCARE REFORM

As a result of these patient, practice, and professional trends, the U.S. healthcare delivery system struggled with the inefficient provision of services (excess capacity in some cases and excess patient volumes in others), an increase in healthcare costs (and, therefore, spending), and a reduction in quality of care.[54] Since the advent of the managed care movement, emphasis has been placed on increasing the integration and diversification of healthcare organizations in order to improve the delivery of quality, cost effective healthcare services, while minimizing inefficiencies (for example, the financial inefficiencies associated with excess capacity).[55] As a response, efforts have been made to develop healthcare reform initiatives, largely financed by the federal government, to address these issues, including the expansion of the eligibility for Medicaid and the creation of federal and commercial ACOs. For a more in depth discussion of the recent healthcare reform issues, see Chapters 2 and 6 in *An Era of Reform—The Four Pillars*.

49 "The Independent Physician—Going, Going..." By Stephen L. Isaacs et al., New England Journal of Medicine, Vol. 360, No. 7, February 12, 2009, p. 655.
50 Ibid, p. 655-656.
51 Ibid, p. 656.
52 "The Dream of Home Ownership" By David Loxterkamp, Annals of Family Medicine, Vol. 7, No. 3, May/June 2009, p. 264.
53 "The Independent Physician—Going, Going..." By Stephen L. Isaacs et al., New England Journal of Medicine, Vol. 360, No. 7, February 12, 2009, p. 656-657; for additional information about high costs of technological advances, such as electronic health records systems, see Chapter 5 in *An Era of Reform—The Four Pillars*.
54 "Healthcare Delivery System Reform: Accountable Care Organizations" By James T. Dove et al., Journal of the American College of Cardiology, Vol. 54, No. 11, 2009, p. 985-986.
55 "The Dynamics and Limits of Corporate Growth in Health Care" By James C. Robinson, Health Affairs, Vol. 15, No. 2, (Summer 1996), p. 156.

EMERGING TRENDS IN INTEGRATED BUSINESS STRATEGIES AND ARRANGEMENTS

Triggered by initiatives in managed care, and again stimulated by ongoing healthcare reform initiatives, healthcare professional practices have started incorporating business objectives that encourage hospitals, physicians, and health plans to integrate, and, more specifically, consolidate, merge, and affiliate.[56] Under such arrangements, no single healthcare entity is wholly accountable, but rather, responsibility, authority, resources, and services are allocated across several partner organizations, administrative authorities, individuals, or a combination of these.[57]

The *integration* of practitioners, hospitals, and practices into increasingly complex delivery systems is among the most commonly seen arrangements adopted to improve business practices in the evolving market.[58] From a patient-centric perspective:

> "[i]ntegration is a coherent set of methods and models on the funding, administrative, organizational, service delivery, and clinical levels designed to create connectivity, alignment, and collaboration within and between the cure and care sectors."[59]

Organizations may choose to utilize any number of integration strategies tailored to improve quality of care, patient satisfaction, and process efficiency.

TYPES OF INTEGRATION

Integration strategies tend to be classified as one of two fundamental forms: horizontal integration and vertical integration.[60] In light of continued growth in healthcare spending and inadequate advances in quality improvement, proponents of healthcare reform are advocating for the expansion and realignment of the archaic, disease-centric healthcare industry focus to encompass a more comprehensive outlook rooted in primary and preventative care at the individual and community level.[61] These advocates maintain that, in order to establish a "generalist" frame of reference while preserving the effective provision of highly specialized services, healthcare delivery systems may need to integrate both vertically and horizontally.[62] In addition, healthcare reform initiatives have focused on outcomes-based reimbursement

56 "Capital Survey of Emerging Healthcare Organizations" Integrated Healthcare Report, Medical Group Management Association, Ziegler Securities, 1996, p. 1.
57 "How Do System-Affiliated Hospitals Fare in Providing Community Benefit?" By Jeffery A. Alexander et al., Inquiry, Volume 46, Spring 2009, p. 72-73.
58 Ibid, p. 72.
59 "Integrated Care: Meaning, Logic, Applications, and Implications—A Discussion Paper" By Dennis L. Kodner and Cor Spreeuwenberg, International Journal of Integrated Care, Vol. 2, November 14, 2002, p. 3.
60 "Integration of Health Care Organizations: Using the Power Strategies of Horizontal and Vertical Integration in Public and Private Health Systems" By Carey Thaldorf and Aaron Liberman, The Health Care Manager, Vol. 26, No. 2, 2007, p. 118-119.
61 "Organizing Health Care for Value" By Kurt C. Stange, MD, PhD, Annals of Family Medicine, Volume 7, Number 5, September/October 2009, p. 465; "The Paradox of Primary Care" By Kurt C. Stange & Robert L. Ferrer, Annals of Family Medicine, Vol. 7, No. 5, July/August 2009, p. 294-296.
62 "The Paradox of Primary Care" By Kurt C. Stange, and Robert L. Ferrer, Annals of Family Medicine, Vol. 7, No. 5, July/August 2009, p. 294-295.

strategies, which provide financial incentives to produce positive outcomes, in contrast to the fee for service reimbursement model, which incentivizes increasing procedure volumes.

Vertical Integration

Vertical integration is "integration of providers at different points along the continuum of care, such as a hospital partnering with a skilled nursing facility or a physician group," and can "facilitate lower costs and… better patient outcomes."[63] These supply-side arrangements are believed to improve efficiency and quality of disease-specific care across all associated practice areas.[64] For example, healthcare executives have associated many of the existing inefficiencies in outpatient cancer care with miscommunication between the potpourri of specialists invested in the provision of oncology services (that is, radiologists, medical oncologists, radiation oncologists, and surgical oncologists).[65] They believe the root cause of this disconnect is system-based, and vertical integration across these specialty areas may improve the fluidity with which cancer-specific services are delivered across a more comprehensive continuum of care.[66] Expected outcomes include reduced: (1) redundancy; (2) waste generation; and (3) spending, together with improvements to the quality of care.[67]

Generally, vertical integration has gained mainstream acceptance and support; however, integration methods must be planned strategically.[68] In response to the managed care outcry against excess capacity, biased incentives, service redundancy, inaccurate scale economies, and other system-based defectives, hospitals entered into vertical arrangements with ambulatory surgery centers, subacute care facilities, nursing homes, and home health suppliers.[69] However, some healthcare organizations lost sight of their target objectives and began broadening their scope of service beyond their original objectives,[70] which may lead to several problems associated with vertical integration, such as: lower flexibility, higher bureaucratic costs, and struggling with balancing capacity.[71]

63 "The Value of Provider Integration" American Hospital Association, Trendwatch, March 2014, http://www.aha.org/content/14/14mar-provintegration.pdf (Accessed 4/7/15), p. 2.
64 "Vertical Integration of Outpatient Cancer Care" By Greg Thompson, Radiology Business Journal, September 9, 2009, http://www.imagingbiz.com/articles/view/vertical-integration-of-outpatient-cancer-care (Accessed 12/09/09).
65 Ibid.
66 Ibid.
67 Ibid.
68 "The Paradox of Primary Care" By Kurt C. Stange, and Robert L. Ferrer, Annals of Family Medicine, Vol. 7, No. 5, July/August 2009, p. 294-295.
69 "The Dynamics and Limits of Corporate Growth in Health Care" By James C. Robinson, Health Affairs, Vol. 15, No. 2, (Summer 1996), p. 160.
70 "What is the difference between and IPA and a medical group?" HC Pro, June 2, 2004, http://www.hcpro.com/HOM-39838-1892/What-is-the-difference-between-an-IPA-and-a-medical-group.html (Accessed 4/8/2015).
71 "Vertical Integration" QuickMBA, 2010, http://www.quickmba.com/strategy/vertical-integration/ (Accessed 4/8/2015).

Horizontal Integration

Horizontal integration "occurs when two or more similar providers… join forces" in an attempt to gain economies of scale, eliminate duplicative services, and consolidate certain common functions like revenue cycle management.[72] Horizontally integrated organizations may include collaborative hospital systems or physician organizations and generally hold an emphasis on the individual, communities, and populations, as compared with vertical systems that are targeted toward specific conditions or disease trends.[73]

Two basic forms of horizontal integration exist: within-market integration and across-market integration.[74] *Within-market integration* is a form of organizational expansion in which merger occurs between entities that provide comparable services in the same market service area.[75] Such arrangements are considered among the most convenient and are believed to improve efficiency and capacity utilization while minimizing redundancy.[76] Intra-market horizontal integration, however, continues to face skepticism and regulatory scrutiny by proxy of the potential for antitrust implications; consequently, horizontal integration is accepted and utilized far less than vertical integration.[77] *Across-market integration* typically involves subsidiaries of large regional or national companies, which "apply organizational competencies acquired in one set of markets" to other markets.[78] Despite the potential political backlash of a local nonprofit healthcare organization being acquired by a national for-profit enterprise, antitrust policy is of minimal concern, provided that penetration into local markets remains unobtrusive.[79]

INTEGRATION STRATEGIES

Integration may be employed to enhance efficiency across five areas of healthcare business practices: (1) funding, (2) administration, (3) organization, (4) the delivery of services, and (5) clinical dynamic.[80] Table 6-1 lists many of the most commonly used integration strategies within each.[81]

72 "The Value of Provider Integration" American Hospital Association, Trendwatch, March 2014, http://www.aha.org/content/14/14mar-provintegration.pdf (Accessed 4/7/15), p. 2.
73 "The Paradox of Primary Care" By Kurt C. Stange, and Robert L. Ferrer, Annals of Family Medicine, Vol. 7, No. 5, July/August 2009, p. 294-295.
74 "The Dynamics and Limits of Corporate Growth in Health Care" By James C. Robinson, Health Affairs, Vol. 15, No. 2, (Summer 1996), p. 156.
75 Ibid, p. 157.
76 Ibid, p. 157.
77 "The Paradox of Primary Care" By Kurt C. Stange, and Robert L. Ferrer, Annals of Family Medicine, Vol. 7, No. 5, July/August 2009, p. 294-295.
78 "The Dynamics and Limits of Corporate Growth in Health Care" By James C. Robinson, Health Affairs, Vol. 15, No. 2, (Summer 1996), p. 158.
79 Ibid.
80 "Integrated Care: Meaning, Logic, Applications, and Implications—A Discussion Paper" By Dennis L. Kodner and Cor Spreeuwenberg, International Journal of Integrated Care, Vol. 2, November 14, 2002, p. 4.
81 Ibid.

Table 6-1: Integration Strategies

Funding:
-Pooling of funds (at various levels) -Prepaid capitation (at various levels)
Administrative:
-Consolidation or decentralization of responsibilities and functions -Intersectoral planning -Needs assessment or allocation chain -Joint purchasing or commissioning
Organizational:
-Co-location of services -Discharge and transfer agreements -Interagency planning or budgeting -Service affiliation or contracting -Jointly managed programs or services -Strategic alliances or care networks -Consolidation, common ownership, or merger
Service Delivery:
-Joint training -Centralized information, referral, and intake -Case or care management -Multidisciplinary or interdisciplinary teamwork -Around-the-clock (on-call) coverage -Integrated information systems
Clinical:
-Standard diagnostic criteria -Uniform, comprehensive assessment procedures -Joint care planning -Shared clinical records -Continuous patient monitoring -Common decision support tools -Regular patient or family contact and ongoing support

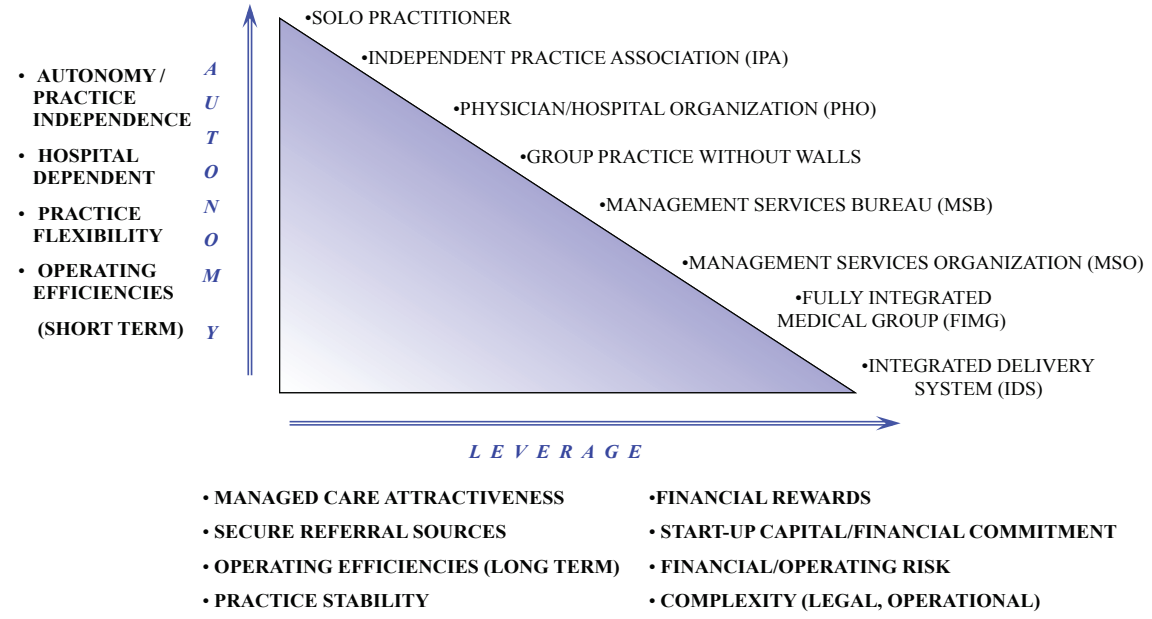
Provider integration and affiliation is a key consideration for the implementation of EHO models. Traditionally, integration strategies were focused solely on arrangements with physician providers, and although the role of non-physician professionals continues to increase in importance, physicians remain at the apex of integration as a vehicle for practices in transition. The primary catalyst for physician integration has been the ability to negotiate higher payments when contracting with predominantly larger healthcare organizations.[82] Several physician or provider integration and affiliation models have been used repeatedly by hospitals, health systems, and EHOs.

82 "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6, November/December 2007, p. 1590, 1593.

EMERGING MODELS OF THE 1990S

During the 1990s, in response to cost containment pressures and other market forces, providers consolidated and integrated into EHOs, a new organizational form at the time, in an attempt to compete more effectively. EHOs are "…an organizational form consisting of hospital(s), physician(s), and/or health plan(s) that have consolidated, merged, integrated or affiliated in response to managed care and integration forces in their market."[83] At their inception, the ultimate objective of physician integration models was to successfully aggregate groups of providers to become the ultimate market competitor: the *highest quality, lowest-cost provider* of healthcare services. Along with the growth and penetration of managed care, the evolution of these systems, organizations, and networks challenged the traditional system of healthcare delivery, which was grounded in a *cottage industry* mentality and centered on physician autonomy and the independent practice of medicine (see Figure 6-1 for an illustration of the relationship between practice autonomy and market leverage).

Figure 6-1: Autonomy and Leverage Diagram



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EHOs are business enterprises comprised of provider(s) (e.g., physicians), facilities (e.g., hospitals), healthcare plans, or a combination of these that have entered into consolidation, merger, integration, or affiliation by proxy of market forces.[84] As introduced in Chapter 5: Organizational Structure, emerging enterprises in the business of healthcare can be classified not only based on integration type but also according to their level of integration, namely as resistors, cost containers, or true integrators.

83 "Capital Survey of Emerging Healthcare Organizations" Integrated Healthcare Report, Medical Group Management Association, Ziegler Securities, 1996, p. 1.
84 Ibid.

RESISTORS

Resistors are organizations designed to (1) maintain the status quo, (2) repel managed care, and (3) gradually develop the knowledge necessary for successful operation within a managed care environment. Two classic models that are commonly found in the healthcare market are (1) *independent practice associations (IPAs)* and (2) *physician-hospital organizations (PHOs)*.

Independent Practice Associations

Description and Scope

IPAs, which are generally nonprofits, are legal entities comprised of independent physician affiliates that contract with MCOs to provide medical services.[85] In the past, IPAs almost exclusively demonstrated horizontal integration (that is, excluding hospitals and other businesses governed by non-physician professionals). However, a growing number of hospitals are pursuing alternatives to the traditional PHO structure by entering into investment arrangements with IPAs.[86] Within this infrastructure, individual physicians generally do not share administrative duties, such as providing for overhead or centralized systems for billing and claims processing.[87] Traditionally, IPAs met managed care expectations by functioning as umbrella organizations that facilitated collaboration between physicians of all specialties. However, IPAs have evolved, in tandem with the market, to encompass not only multispecialty organizations but also enterprises that provide primary care and single specialty services.[88]

It is important to distinguish an IPA from an IPA-model health maintenance organization (HMO). An IPA-model HMO contracts with an association of physicians (that is, the IPA) in order to provide beneficiaries a managed care product with an open panel, from which they may choose from a provider panel, comprised of multiple physicians.[89] A true IPA is organized by physicians in an effort to protect the interests of its member physicians. It may have contracts with multiple MCOs that offer various types of products, including (but not limited to) IPA-model HMOs.[90]

Objective

Physicians often form IPAs as a first step toward integration; this movement is often instigated by trends, initiatives, or policies (for example, managed care and ongoing efforts in healthcare reform) that catalyze industry changes that affect reimbursement, regulation, market competition, or a combination thereof. Physicians form IPAs in hopes of (1) preserving clinical autonomy, (2) avoiding the trend toward group practice, (3) gaining negotiating leverage with payors, and (4) retaining market share. However, IPAs and other EHOs may be mutually exclusive and

85 "Health Care Administration: Planning, Implementing and Managing Organized Delivery Systems" By Lawrence F. Wolper, Sudbury, MA: Jones and Bartlett Publishers, Inc., 2004, p. 558.
86 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 35.
87 "Health Care Administration: Planning, Implementing and Managing Organized Delivery Systems" By Lawrence F. Wolper, Sudbury, MA: Jones and Bartlett Publishers, Inc., 2004, p. 558.
88 Ibid.
89 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 26, 35.
90 Ibid.

consideration should be given to other EHOs that may be better suited to maintaining control of resources.[91]

The advantages and disadvantages associated with IPAs, as compared to other EHO models, directly relate to existing market demands. Namely, IPAs tend to rely upon (1) hospital market leverage, (2) MCO market control, and (3) the financial incentives offered for improving efficiency and quality of care.[92] Traditionally, IPAs were employed as vehicles by which independent practitioners could resist the push toward managed care and simultaneously maintain relationships with any number of payors, often contracting with many MCOs[93] in order to reduce the likelihood that patients will leave the practice due to a change in insurance carrier.

The threat of elevated premiums and escalating healthcare expenditures has challenged all healthcare organizations.[94] The following healthcare reform initiatives have been proposed: (1) to elevate provider accountability; (2) to realign incentives; and (3) to emphasize improvements in healthcare spending, quality, and efficiency.[95] Accountable Care Organizations (ACOs) (discussed at a greater length in *Accountable Care Organization Model*, below) were proposed to align clinicians within a community by assigning them collective accountability and encouraging them to reduce costs and enhance quality of care.[96] Proponents of ACOs claim that the model is flexible enough to incorporate the numerous existing delivery systems and organizational models, including IPAs.[97]

Physician-Hospital Organizations

Description and Scope

A *physician-hospital organization (PHO)* unites a hospital or group of hospitals with a physician organization through a contractual relationship; those contract terms are then used to negotiate with MCOs.[98] Just as IPAs are considered the first step in horizontal integration, the PHOs are the first step in vertical integration.[99]

A PHO is usually a separate business entity (for example, a for-profit corporation) from the professional medical practice(s) and the hospital that comprise its membership. There exist several possible capitalization and ownership arrangements between the hospital(s) and the physician(s) in a PHO model organization, including:[100]

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91 Ibid, p. 35.
92 "Managed Care and Market Power: Physician Organizations in Four Markets" By Meredith B. Rosenthal, Bruce E. Landon, and Haiden A. Huskamp, Health Affairs, Volume 20, Number 5, September/October 2001, p. 188.
93 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley and Sons, 2014, p. 617.
94 "Managed Care and Market Power: Physician Organizations in Four Markets" By Meredith B. Rosenthal et al., Health Affairs, Vol. 20, No. 5, September/October 2001, p. 192.
95 "A Consumer Perspective on Physician Payment Reform" By John Rother, Health Affairs, Web Exclusive Publication, January 27, 2009, p. w235, w237.
96 Ibid, p. w237.
97 Ibid, p. w237.
98 "Health Care Administration: Planning, Implementing and Managing Organized Delivery Systems" By Lawrence F. Wolper, Sudbury, MA: Jones and Bartlett Publishers, Inc., 2004, p. 558-559.
99 Ibid, p. 558.
100 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 42-43.

(1) *Individual physician-ownership of shares* in a physician organization that enters a joint venture with a hospital called a PHO;
(2) *Direct physician-ownership of shares* in the PHO, rather than through an intermediary physician organization; and
(3) *No physician-ownership* in the PHO, rather full hospital-ownership with physicians following participation agreements.

Because the PHO is an independent entity, the individual physicians' existing practice organizations generally choose to remain physically separate.[101] Therefore, aside from the medical management, utilization review, quality improvement, and related standards that the PHO may need to impose for contracting purposes, practice autonomy of the constituent providers can be largely maintained.[102]

PHOs may establish an open or closed provider panel.[103] An *open PHO* may include any member of a hospital's medical staff (sometimes pending a minimum credentialing requirement) as part of its provider panel.[104] Because specialists have more to lose than primary care physicians by not consolidating contracting efforts, open PHOs are often specialty-dominated.[105] Many open PHOs are established with the vision of one day becoming a closed panel, in which inefficient and wasteful providers are removed from the organization.[106] However, MCOs are often skeptical of this lofty goal because it can be difficult for PHOs to make this transition.[107] *Closed PHOs* limit membership to a defined group of physicians.[108] PHOs that begin as closed panels have a higher percentage of primary care physicians in their membership and governance.[109] Although this heightens the appeal of PHOs to stakeholders pursuing managed care contracts, closed panel HMOs are often difficult to implement due to political conflicts between the hospital and medical staff.[110]

Objective

The objective of forming or joining a PHO is different for hospitals and physicians. Hospitals may seek to expand and solidify market control of a specific range of health services while improving relations with physicians.[111] Physicians may be looking for a measure of financial security under the safeguard of a capital-rich hospital. However, one common objective exists for all parties: improved leverage in negotiating managed care contracts.[112]

101 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 41.
102 Ibid.
103 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley and Sons, 2014, p. 617.
104 Ibid.
105 Ibid.
106 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 43.
107 Ibid.
108 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley and Sons, 2014, p. 617.
109 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 43.
110 Ibid.
111 "Hospital-Physician Relations: Two Tracks And The Decline of The Voluntary Medical Staff Model" By Lawrence P. Casalino et al., Health Affairs, Volume 27, Number 5, September/October 2008, p.1308.
112 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 44.

Recent economic and demographic trends have further enforced the significance of integration, namely in the form of hospital-physician relationships.[113] From a hospital perspective, physicians are key drivers of revenue and, therefore, market share. Strong relationships with physicians may positively affect a hospital's market share, just as severed physician-hospital relationships may be detrimental to the hospital's competitive position.[114] In light of economic trends in the healthcare market, as well as the physician and non-physician manpower deficiencies, hospital recruitment and employment may be particularly critical for institutional success and also for arriving at solutions to ongoing health disparities and unmet demand.[115] As a consequence of economic changes and downward pressure on reimbursement rates, independent practitioners and small group practices are struggling to survive, much less recruit from, the diminishing physician population.[116] This is evidenced by a recent report published by Merritt Hawkins, a national healthcare search and consulting firm specializing in the recruitment of physicians, which indicated 64% of their physician search assignments during 2014 were for a hospital employment setting (fewer than 10% of their search assignments were for private practice settings).[117] As such, it is imperative that collaborative relationships with aligned objectives are established between hospitals and physicians.[118]

COST CONTAINERS

Cost containers are organizations that are capable of controlling healthcare costs through economies of scale. However, cost containers are limited in their ability to contract effectively with MCOs while systematically improving the efficiency with which care is administered. The most common cost container models found in practice are (1) physician practice management companies (PPMCs) and (2) management services organizations (MSOs).

Physician Practice Management Companies

Description and Scope

Physician practice management companies (PPMCs) specialize in the management of large physician group practices or IPAs. They emerged as a means of integration in the mid-1990s, only to endure market-wide failure near the turn of the century.[119] The PPMC model emphasizes management through ownership, management agreement, or both, with the purpose of improving management and economies of scale for their physician groups.[120] PPMCs generally own the

113 "Why the Hospital Buying Spree May be Coming to an End" By David Doyle, Physicians Practice, 3/29/2014, http://www.physicianspractice.com/blog/why-hospital-buying-spree-may-be-coming-end (Accessed 4/7/2015).
114 "Partners in Change: Physicians and Hospitals Aligning for Success" By Deborah Popely, Healthcare Executive, July/August 2009, p. 9.
115 Ibid, p. 10.
116 Ibid, p. 9-10.
117 "2014 Review of Physician and Advanced Practitioner Recruiting Initiatives" Merritt Hawkins, 2014, http://www.merritthawkins.com/uploadedFiles/MerrittHawkings/Surveys/mha2014incensurvey.pdf (Accessed 3/31/15), p. 3.
118 "Partners in Change: Physicians and Hospitals Aligning for Success" By Deborah Popely, Healthcare Executive, July/August 2009, p. 10.
119 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 36; "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 148.
120 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 36-38; "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 45.

physician practices with which they affiliate.[121] To be classified as a PPMC, an organization should be physician-focused[122] and does not need to be publicly-traded.[123]

Further, PPMCs are categorized according to their affiliation design and physician specialty mix.[124] PPMCs may engage in (1) equity affiliations, (2) management affiliations, or (3) physician contractor affiliations.[125] Each of these three affiliation designs may involve different combinations of specialties.[126] *Equity affiliation* requires that a PPMC purchase a facility's tangible assets and that a long-term management services agreement be signed between the PPMC and the acquired facility.[127] A *management affiliation* requires that a PPMC own or provide contractual management services to an IPA; this allows physicians to maintain their independent clinical practices, because the PPMC does not acquire any assets of the medical practices or enter into any long-term agreements.[128] Through *physician contractor affiliation*, PPMCs provide services to hospitals and develop contracts with independent physicians.[129]

Objective

PPMCs emerged as a result of consolidation in the healthcare industry.[130] As institutional forces and insurance players (that is, hospitals and HMOs, respectively) became larger, the need for physician access to capital increased.[131] Prior to the proliferation of PPMCs, capital considerations had become as influential, if not more so, than the authority of a medical degree in the direction of patient care. PPMCs offered physicians access to untried capital markets.[132] As a result, physicians in PPMCs were able to build surgery centers, expand service lines, and bolster contracting leverage with MCOs, hospitals, and health systems.

Physicians saw PPMCs as an opportune means of regaining practice control and/or capitalizing on their established businesses.[133] By offering cash and stock for affiliation agreements, PPMCs attracted entrepreneurial physicians and had a significant effect on ownership trends in local markets.[134]

The late-1990s marketplace saw the demise of PPMCs (particularly public PPMCs). The demise may be attributable to several of the characteristic disadvantages of this model.[135] PPMCs often

121 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 36-37; "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 45.
122 "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 191.
123 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 36-38.
124 "Physician Practice Management Companies: Implications for Hospital-Based Integrated Delivery System" By Lawton R. Burns and James C. Robinson, Frontiers of Health Services Management, Vol. 14, No. 2, Winter 1997, p. 6.
125 Ibid, p. 6-7.
126 Ibid, p. 4-5.
127 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 37.
128 "Physician Practice Management Companies: Implications for Hospital-Based Integrated Delivery System" By Lawton R. Burns and James C. Robinson, Frontiers of Health Services Management, Vol. 14, No. 2, Winter 1997, p. 7.
129 Ibid.
130 "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 45.
131 "Physician Practice Management Companies: Implications for Hospital-Based Integrated Delivery System" By Lawton R. Burns and James C. Robinson, Frontiers of Health Services Management, Vol. 14, No. 2, Winter 1997, p. 4-5.
132 Ibid.
133 "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 147-148.
134 Ibid, p. 45.
135 "Is it Time to Resurrect Physician Practice Management Organizations?" By Beth Guest and Michael Collins, Health Leaders Media, 3/11/2010, http://www.healthleadersmedia.com/print/PHY-247842/Is-it-Time-to-Resurrect-Physician-Practice-Management-Organizations (Accessed 4/7/2015).

lacked the ability to initiate physician practice reform, engender physician dedication, or inspire physician leadership. As such, all efforts at leadership and development came from the non-physician shareholders of the PPMC that often possessed only a strictly investment-driven perspective.[136] Also, misalignment of incentives for non-physician investors tended to focus the operation of the PPMC entirely on profit maximization resulting in internal conflict between the patient care focus of clinicians and the profit motives on non-physician investors.[137]

Although the PPMC model should, in theory, promote a sense of ownership and a realignment of incentives among the investor physicians, PPMCs, in fact, struggled to develop the envisioned gains.[138] The pervasive decline of PPMCs has caused an industry-wide reluctance and distrust of the adoption of a redeveloped or restructured PPMC model,[139] despite the potential for a PPMC to lower costs, improve quality, and increase reimbursement through improved contract negotiations.

Management Services Organizations

Description and Scope

A *management services organization (MSO)* is a legal entity, owned by physicians, hospitals, and/or lay investors, that provides an array of practice management services.[140] Typically, an MSO is not licensed to practice medicine but simply serves as a "services/asset leasing company that supports the back office of a medical practice… [I]n effect, the MSO is simply the expense side of the medical practice."[141] MSOs that engage in more comprehensive physician practice management are considered "aggressive mechanisms to encourage group practice development."[142] In addition to providing managerial governance and support, these entities may be the owner of record for the tangible assets (i.e., furniture, fixtures, and equipment) utilized in the physician practice and the employer of the physician and non-physician workforces.

MSOs have been around in some form since 1987 and were first developed in California as a response to managed care. As early as 1993, 8% of all community hospitals had developed an MSO, and 33% of hospitals that had entered into arrangements with physicians had formed an MSO.[143] The proportion of hospitals with MSOs peaked in 1996 and has been declining ever since. By 2000, less than 13% of hospitals had an MSO (down from 22%). Further, of the 4,999 acute care hospitals in the United States in 2012, 441 of them (8.82%) had developed MSOs. The following Table 6-2 compares the number of hospital-affiliated MSOs to the number of hospitals in existence from 2002 to 2012.

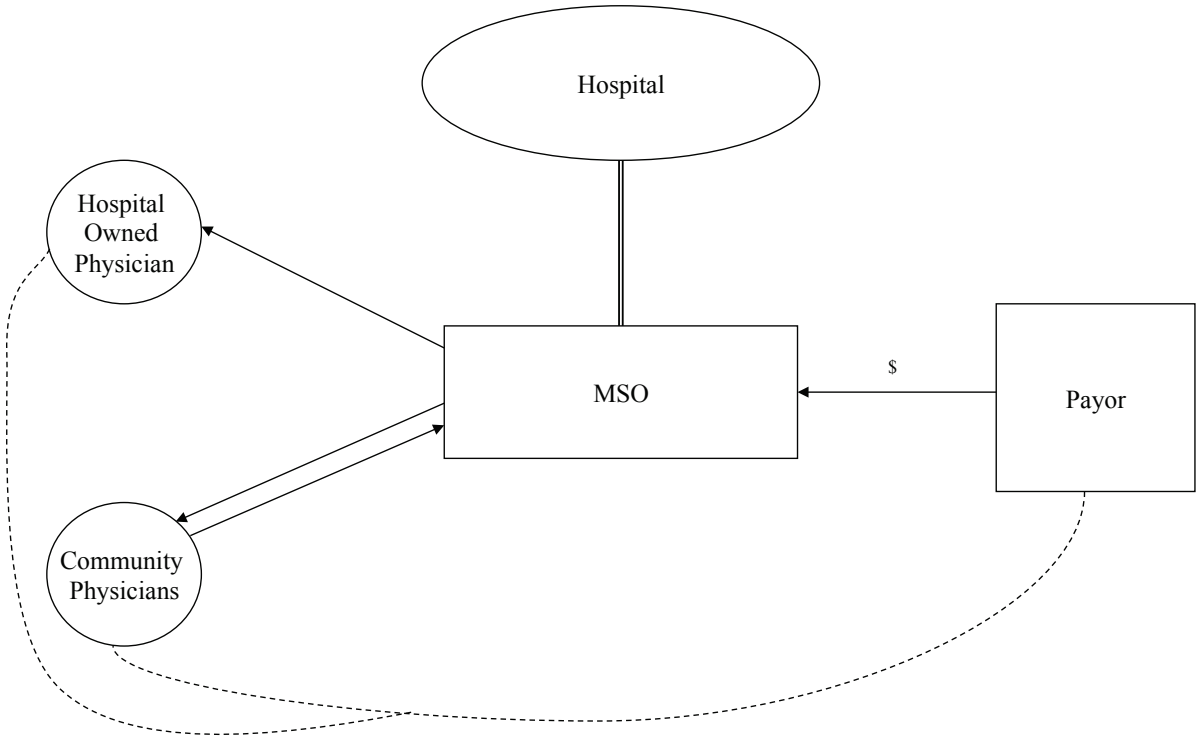
136 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 38.
137 "Is it Time to Resurrect Physician Practice Management Organizations?" By Beth Guest and Michael Collins, Health Leaders Media, 3/11/2010, http://www.healthleadersmedia.com/print/PHY-247842/Is-it-Time-to-Resurrect-Physician-Practice-Management-Organizations (Accessed 4/7/2015).
138 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 38.
139 Ibid, p. 36-39.
140 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 297-298.
141 Ibid, p. 8.
142 "From Physician Bonding to Alliances: Building New Physician-Hospital Relationships" By Douglas Goldstein, Alexandria, VA: Capital Publications, Inc, 1992, p. 27.
143 "Managed Care and Physician/Hospital Integration: Is Managed Care Driving Hospitals and Physicians Toward More Integration? New National Data Uncover the Trends" By Michael A. Morrisey et al., Health Affairs, Vol. 15, No. 4, Winter 1996, p. 67.

Table 6-2: Number of Community Hospitals and Community Hospital-Affiliated Management Services Organizations (MSOs)[144]

Year	Community Hospitals	MSOs
2002	4,927	519
2003	4,895	480
2004	4,919	443
2005	4,936	438
2006	4,927	445
2007	4,897	453
2008	5,010	436
2009	5,008	449
2010	4,985	454
2011	4,973	446
2012	4,999	441

MSOs are owned most commonly by hospitals or a joint venture between a hospital and a physician group (see the following Figures 6-2 and 6-3). However, both physician- and investor-owned MSOs exist (Figure 6-4) without direct hospital participation.

Figure 6-2: Hospital- or System-Owned Management Services Organizations (MSOs)



144 "Hospital Statistics" American Hospital Association, 2005, p. 10. [Years 2002-2003]; "Hospital statistics" American Hospital Association, 2008, p. 10. [Years 2002-2006]; "Hospital Statistics" American Hospital Association, 2012, p. 12. [2007]; and "Hospital Statistics" American Hospital Association, 2014, p. 12. [2008-2012].

Figure 6-3: Joint Venture Hospital or Physician-Owned Management Services Organization (MSO)

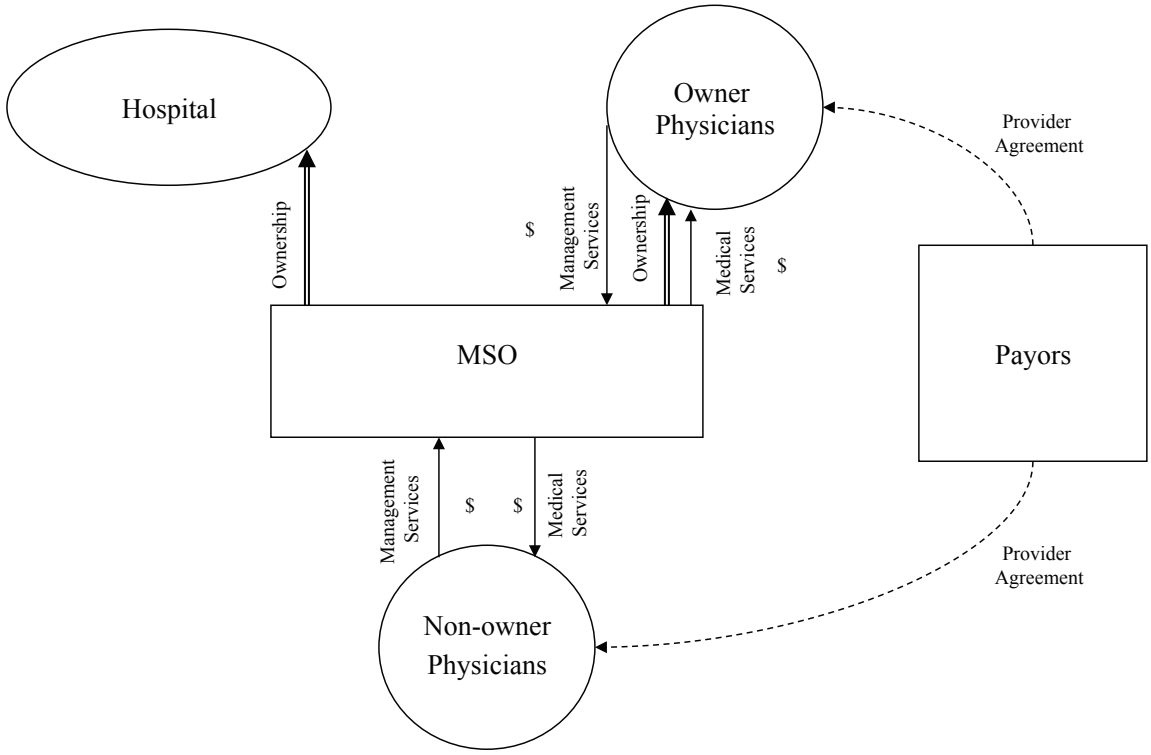
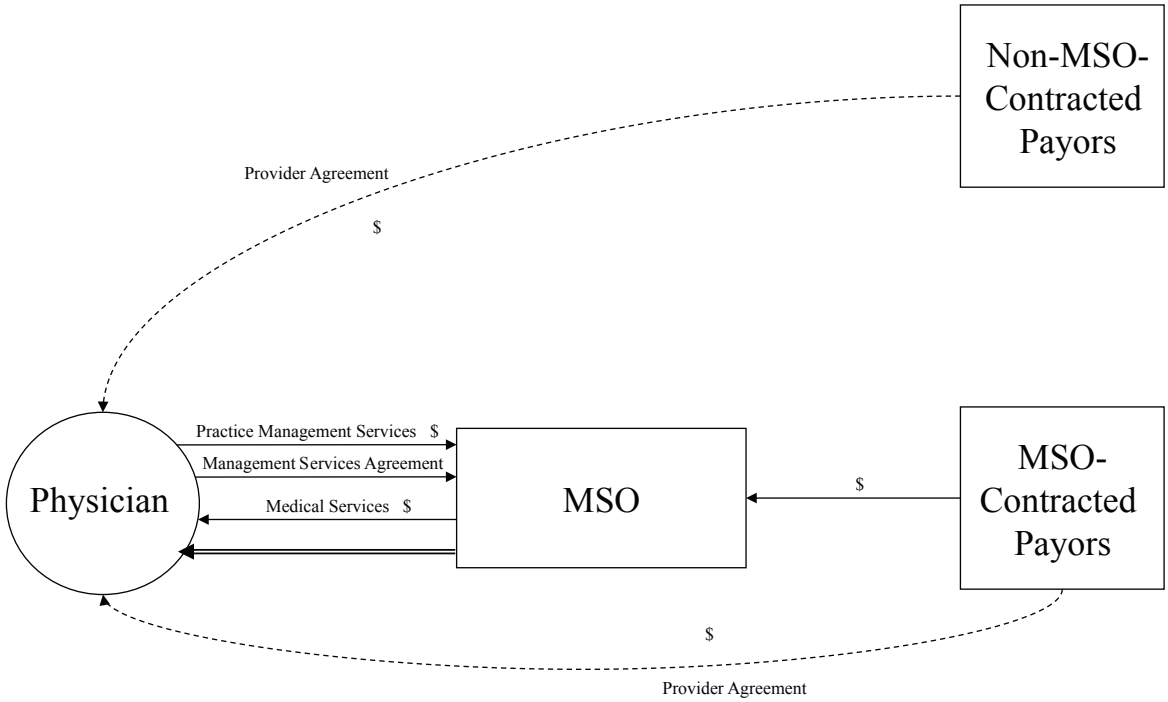


Figure 6-4: Physician- or Investor-Owned Management Services Organization (MSO)



MSOs sell practice management services for a monthly fee,[145] with these services including, but not limited to:[146]

(1) Management consulting services;
(2) Physician recruitment;
(3) Marketing and public relations;
(4) Vendor contract negotiations;
(5) Centralized purchasing services;
(6) Standardized payroll and employee benefits services;
(7) Revenue cycle management;
(8) Human resources management;
(9) Payor contract negotiation;
(10) Quality assurance;
(11) Medical records management; and/or,
(12) Facilities planning and management.

The broad scope of the potential services offered by MSOs illustrates the necessity of defining the services that the MSO will offer, both within the MSO's organizational documents as well as in the individual service agreements entered into by the MSO. The comprehensiveness of the functions to be performed by the MSO is a distinguishing factor in the varying types of MSOs.[147] *MSO* is used generically to describe a number of possible business combinations[148] and an analyst should be aware that "once you've seen one MSO, you've seen one MSO."

Objective

Numerous types of MSOs exist, and the distinction between each type is based on a combination of factors: (1) the purpose of the MSO, (2) the functional models of the MSO, and (3) the organizational structure of the MSO.[149]

The Purposes of MSOs

The first and most fundamental consideration in the development of an MSO is the purpose it will serve.[150] The structure of each MSO model can be characterized by the objective(s) it aims to achieve, including (1) pursuing opportunities for growth and integration, (2) separation of practice operation from asset ownership, (3) improving practice management quality, and (4) accessing capital from lay investor equity.[151] Though this is not an exhaustive list, it provides a broad look at the range of purposes an MSO can serve within a hospital network.

145 "Models of Physician-Hospital Integration: Possibilities and Pitfalls" By Lawton R. Burns, University of Pennsylvania, November 1995, http://www.upenn.edu/ldi/issuebrief2_7.html (Accessed 4/7/2015).
146 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Vol. 2, Hoboken, NJ: John Wiley and Sons, 2014, p. 613.
147 "Would an MSO Make Your Life Easier?" By Kristie Perry, Medical Economics, Vol. 72, No. 7, April 10, 1995.
148 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 300.
149 "Would an MSO Make Your Life Easier?" By Kristie Perry, Medical Economics, Vol. 72, No. 7, April 10, 1995.
150 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 298.
151 Ibid.

Functional Models of an MSO

To clearly illustrate the varied functions of MSOs, two functional models will be presented here that represent the extremes of the continuum of MSOs,[152] with most operating MSO's falling somewhere within the spectrum of these two models.

Management Services Bureau (MSB) or "Low-Tech" Model

In this MSO model, the physician professional practice maintains an independent legal entity, distinct from the MSO, that contracts non-clinical services, such as management and billing, from the MSB at fair market value.[153] This model is representative of the least comprehensive of MSOs.[154] Physicians pick and choose *a la carte* the services they would like to contract through the *management services bureau (MSB)*. For example, the practice may elect to receive only billing and collection services from the MSO or only physician recruitment services.

Comprehensive or "Turnkey" Model

The *comprehensive* or "turnkey" model MSO offers a comprehensive array of services including all of the nonclinical aspects of a practice's operations.[155] Examples of services that would be provided may include: (1) facilities planning and management, (2) equipment and furnishings, (3) financial services, (4) marketing, (5) utilization review, (6) medical records, (7) personnel management, and (8) negotiation of payor contracts.[156]

Organizational Structure of an MSO

As has been previously noted, MSOs, and consequently their organizational structure, are unique to their particular purposes. With the diversity of potential uses for an MSO comes an equally diverse set of organizational structures. However, certain broad characterizations can be made regarding MSOs based upon the composition of their ownership.

System-Owned (Hospital-Based) MSOs

System-owned (hospital-based) MSOs are one of the most common types of MSO and are typically created, funded, and governed by hospitals.[157] Hospital-owned MSOs may be considered less attractive to independent physicians because the affiliation may require them to become a salaried employee of the hospital, an action that may decrease practice autonomy.[158]

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152 Ibid, p. 331.
153 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 45-46.
154 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 45-46; "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 300, 333.
155 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 45-46; "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 300, 333.
156 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 300, 333.
157 Ibid, p. 301, 305.
158 "Would an MSO Make Your Life Easier?" By Kristie Perry, Medical Economics, Vol. 72, No. 7, April 10, 1995.

Benefits to this structure include both increased access to capital for financing equipment and the increased security of a salaried staff position.[159]

Typical physician practices pay the MSO approximately 55% of their gross collections, with the MSO sometimes also charging these practices a flat monthly fee as a guard against doctors decreasing their productivity.[160]

Several key elements should be considered when establishing a hospital-owned MSO: (1) charges must be at *fair market value* in order to avoid violating Medicare fraud and abuse, anti-kickback, and Stark laws; (2) the fees charged to the physician practice must not take into account the volume or value of referrals; and (3) it must be ensured that there is no violation of the Internal Revenue Service's (IRS's) prohibition related to inurement of benefit.[161]

A hospital-based MSO is likely to embody one of several governance and business structures, depending on what it is trying to achieve.[162] It may be structured as a nonprofit subsidiary corporation in an effort to protect the hospital's tax-exempt status.[163] It is important to note that this strategy is at risk if the IRS follows the money from the MSO to the source (that is, the hospital) and finds that the funds benefited private individuals "more than incidentally."[164] Even if established as a nonprofit corporation, the MSO is not likely to gain a tax-exempt status.[165] The MSO may be structured as an S corporation if ownership will be shared at a later date.[166] For follow-through tax advantage, an MSO may be structured as a limited liability corporation or LLC.[167]

Joint Venture Hospital or Physician-Owned MSOs

A *joint venture* corporate structure may be selected as it allows physicians to maintain some measure of autonomy through their common ownership of the MSO. Acceptable joint venture structures between a hospital and a physician professional practice may include (1) a general partnership, (2) a nonprofit corporation, (3) a for-profit business corporation, and (4) the physician or hospital equity model.[168]

159 Ibid.
160 Ibid.
161 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 305, 307.
162 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 46; "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 8.
163 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 305-306.
164 Ibid.
165 "Integrated Delivery Systems and Joint Venture Dissolutions Update" By Charles Kaiser et al, Internal Revenue Service, 1995, http://www.irs.gov/pub/irs-tege/eotopicl95.pdf (Accessed 4/7/2015), p. 5.
166 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 306.
167 Ibid.
168 "Integrated Delivery Systems and Joint Venture Dissolutions Update" By Charles Kaiser et al, Internal Revenue Service, 1995, http://www.irs.gov/pub/irs-tege/eotopicl95.pdf (Accessed 4/7/2015), p. 5.

Physician- or Investor-Owned MSOs

In some cases, multiple independent physicians or physician practices may come together to form an MSO in an effort to control overhead expenses by sharing assets that would be underutilized by a single physician or practice. No material difference exists between a *physician- or investor-owned MSO* and a PPMC.[169]

TRUE INTEGRATORS

True integrators, namely (1) fully integrated medical groups (FIMGs) and (2) integrated delivery systems (IDSs), are so financially integrated through risk contracting or ownership that true integration of care processes is feasible. Although very few systems in the United States operate as true integrators, many EHOs aspire to this level of assimilation.

Fully Integrated Medical Groups

Description and Scope

A *fully integrated medical group (FIMG)* is a medical group practice organized as a single legal entity.[170] Management is centralized and has sufficient authority to effectively manage both the medical and business operations of the group.[171] This allows FIMGs to integrate clinical, financial, and operational aspects of the practice.[172] A compensation plan for physicians aligns the incentives of the physician and the group.[173] FIMGs represent the most horizontally integrated of the EHO models. Some FIMGs are part of physician equity groups in which physicians own their medical practices while a separate organization (that is, an MSO) provides the practice with nonclinical support.[174] Physician equity group arrangements can vary in their level of integration from that of traditional practices to that of FIMGs.[175]

An FIMG's central organization is often a corporation governed by a board of directors authorized to control (1) non-clinical business and administrative operations, (2) clinical systems, (3) compensation, and (4) other management of the group.[176] Physicians own equity shares in the organization but do not directly own the practice's assets, tangible or intangible.[177]

169 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 306-307.
170 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 307.
171 Ibid, p. 10, 27, 235.
172 Ibid, p. 10, 27, 235.
173 "Physician Compensation: Models for Aligning Financial Goals and Incentives" By Kenneth Hekman, Englewood, CO: Medical Group Management Association, 2002, p. 9-10.
174 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 235.
175 Ibid, p. 241.
176 "Medical Group Development for Physician Networks" By Jerry Peters, American Health Lawyers Association, 1994, https://www.healthlawyers.org/Archive/Program%20Papers/1994_MA/[1994_MA]%20MEDICAL%20GROUP%20DEVELOPMENT%20FOR%20PHYSICIAN%20NETWORKS.pdf (Accessed 4/7/2014), p. 25.
177 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 247.

Two elements must be accounted for in order to achieve the level of operational management and control on which an FIMG depends: (1) authority and (2) information.[178] The former is assured through the organizational structure of FIMGs; the latter depends on sophisticated management information systems (MIS). These systems allow multiple practice locations to operate consistently as a single entity.[179] They also provide management with the information required to control utilization, manage medical quality, and efficiently oversee the financial operations of the group.[180]

Objective

FIMGs result from the continuous quest for improved management of group practice operations. FIMGs may have in-house medical management and sophisticated information systems to support the ability of their physicians to make informed clinical and financial decisions.[181] The strong medical management of FIMGs should be attractive to managed care plans; however, if the practice lacks sufficient size, it may be unable to fully leverage from its depth of management in negotiating contracts.[182] To some extent, this may be mitigated by FIMGs that dominate a specialty niche within their market. Once a management system is in place, FIMGs may seek improved leverage through mergers or internal organic growth opportunities.

Integrated Delivery Systems

Description and Scope

As reform initiatives continue to take effect, hospitals and physicians, as traditional providers of care, are destined to become increasingly integrated into single organizations, aspiring to unprecedented efficiency and a truly comprehensive continuum of care.[183] *Integrated delivery systems (IDSs)* are vertically integrated organizations that are frequently comprised of insurers alongside physician practices, hospitals, and other entities that provide medical care to a specific population.[184] Most existing IDSs began when hospitals acquired or affiliated with physicians through PHOs or MSOs for the purpose of managed care contracting.[185]

IDSs are considered the most ambitious of the vertically integrated healthcare organizations. They incorporate: (1) acute hospital care; (2) physician services; (3) payors (for example, health plans);[186] and (4) other non-acute services (for example, home health care, skilled nursing care,

178 Ibid, p. 235.
179 "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 185.
180 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 235-237; "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 185, 191, 196.
181 "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 191.
182 "Physician Equity Groups and Other Emerging Entities: Competitive Organizational Choices for Physicians" By Fred McCall-Perez, New York, NY: McGraw-Hill, 1997, p. 191.
183 "Unhealthy Trends: The Future of Physician Services" By Hoangmai H. Pham and Paul B. Ginsburg, Health Affairs, Vol. 26, No. 6, November/December 2007, p. 1593, 1596.
184 Ibid, p. 1596.
185 "The Holographic Organization" By Stephen M. Shortell et al., Healthcare Forum Journal, Vol. 36, No. 2, March/April 1993, p. 22, 25.
186 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 32-33; "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 31.

rehabilitation, and hospice). The organizational structure of an IDS typically includes four players: (1) hospital(s), (2) physician practice(s), sub-acute service provider(s), and (4) insurer(s) (or entities that are able to accept capitation).[187] IDS governances are often structured by a central corporation that owns or controls the individual entities, which enables global contracting.[188]

The IDS structure is intended to accomplish not only managed care contracting and economies of scale, but also the management of the health outcomes of a population of patients.[189] To accomplish this population health management goal, IDSs assemble health providers across the continuum of care, from primary care physician practices to specialists to hospitals and nursing homes.[190] The inclusion of an insurance entity enables an organization to develop a global capitation model where the IDS is responsible, on a prepaid basis, for all of the healthcare needs of a given patient population. Ideally, efficiencies would be achieved through the utilization of sophisticated information systems across all delivery sites[191] that track patients interactively.

One of the greatest challenges to the success of an IDS is the coordination of the various players with their differing cultures, attitudes, and motivations into a collaborative, unified organization striving toward the same goals. For example, hospital executives may struggle to embrace the fact that increasing patient hospital admissions is no longer the goal of the organization. Rather, proactive preventative primary care services, including patient education and primary and secondary prevention of disease (for example, immunization and early detection) are used to keep individual patients as well as the patient population healthy.[192]

Objective

The objective of the IDS model is to provide the entire continuum of medical care to a large number of patients enrolled in the managed care plans the IDS has contracts with.[193] An IDS can take responsibility for a group by attracting healthcare purchasers, including managed care companies representing many purchasers[194] because most people obtain access to healthcare through their membership in a group (for example, employment, Medicare, or Medicaid).

Information systems are especially pertinent when IDSs want to measure the quality of their services and systems.[195] "Outcomes" is the term used to describe the results that a health delivery system produces in terms of mortality rates, immunization rates, disease screening rates, and general health or functional status of the population the system serves.[196] An information

187 "Essentials of Managed Health Care" By Peter R. Kongstvedt, 4th ed., Sudbury, MA: Jones and Bartless Publishers, 2003, p. 32-33.
188 "Healthcare Integration: A Legal Manual for Constructing Integrated Organizations" By Gerald R. Peters, Washington, D.C.: National Health Lawyers Association, 1995, p. 29-31.
189 Ibid, p. 21-22.
190 Ibid, p. 22.
191 Ibid, p. 22.
192 "A Comparison of Organized and Traditional Health Care: Implications for Health Promotion and Prospective Medicine" By D.M. Lawrence, Methods of Information in Medicine, Vol. 44, No. 2, 2005, p. 273.
193 "Integrated Delivery Systems: Creation, Management, and Governance" By Douglas A. Conrad and Stephen M. Shortell, Chicago, IL: Health Administration Press, 1997, p. 7.
194 Ibid, p. 48-49.
195 Ibid, 1997, p. 48-49.
196 "Selecting Health Outcome Measures for Clinical Quality Management" Agency for Healthcare Research and Quality, 5/29/2014, http://www.qualitymeasures.ahrq.gov/tutorial/HealthOutcomeMeasure.aspx (Accessed 4/7/2015).

system that can track patients and their diagnoses, treatments, and results is necessary to quantify outcomes for purchasers and to initially manage costs and processes.[197]

EMERGING MODELS IN AN ERA OF REFORM

Certain organizational models have emerged independent of the traditionally recognized EHOs noted above. Some alternative EHO models address issues with the marketplace for healthcare services, such as alleviating patient access to care limitation and attempting to provide a tangible vehicle for substantive reform.

CONCIERGE CARE MODEL

Concierge care, also known as "luxury health care," "retainer medicine," "personalized health care," and "boutique medical practices," [198] has, in essence, taken a defensive stance against the managed care movement, population health demands, and the resulting incentives that comprise healthcare reform.[199] For an annual retainer free—either bolstered by or independent of the cost of insurance—"patients can expect more personalized services, including twenty-four hour doctor access, coordinated referrals to specialists, online access to their medical records, same day appointments, and longer appointment times."[200] Even if retainer fees must be paid without the assistance of insurance, some beneficiaries will keep traditional insurance coverage to help pay for any tests or scans that their concierge physician may order. Some may argue that the market will always call for solutions of a different kind and that boutique practices only fuel physician greed.[201] However, some boutique practitioners believe that this genre of healthcare organization emerged as a consequence of the frustrating restrictions placed on physicians by managed care, exacerbated by [202] "the decrease in physician autonomy, combined with low reimbursement rates, rising overheads, and rising malpractice premiums, makes it easier to understand why some doctors were looking for change."[203] By utilizing retainer fees as supplemental income, physicians in boutique practices are afforded the option of seeing fewer patients[204] and, as a result, offering what may be regarded as better quality patient care while increasing their salaries.

197 "Integrated Delivery Systems: Creation, Management, and Governance" By Douglas A. Conrad and Stephen M. Shortell, Chicago, IL: Health Administration Press, 1997, p. 29.

198 "Is Boutique Medicine a New Threat to American Health Care or a Logical Way of Revitalizing the Doctor-Patient Relationship?" By Jennifer Russano, Journal of Law and Policy, Vol. 17 (2005), http://law.wustl.edu/Journal/17/p313%20Russano%20book%20pages.pdf (Accessed 08/04/09), p. 321.

199 For more information, see Chapters 2 and 4 of *An Era of Reform—The Four Pillars.*

200 "Is Boutique Medicine a New Threat to American Health Care or a Logical Way of Revitalizing the Doctor-Patient Relationship?" By Jennifer Russano, Journal of Law and Policy, Vol. 17 (2005), http://law.wustl.edu/Journal/17/p313%20Russano%20book%20pages.pdf (Accessed 08/04/09), p. 321.

201 "Luxury Primary Care—Market Innovation or Threat to Access?" By Troyen Brennan, New England Journal of Medicine, Vol. 346, No. 15, 4/11/2002, p. 1167.

202 "Doctors' New Practice Offer Delux Service for Deluxe Fee" By Pam Belluck, New York Times, January 15, 2002, http://www.nytimes.com/2002/01/15/us/doctors-new-practices-offer-deluxe-service-for-deluxe-fee.html?pagewanted=all (Accessed 4/7/2015).

203 "Is Boutique Medicine a New Threat to American Health Care or a Logical Way of Revitalizing the Doctor-Patient Relationship?" By Jennifer Russano, Journal of Law and Policy, Vol. 17 (2005), http://law.wustl.edu/Journal/17/p313%20Russano%20book%20pages.pdf (Accessed 08/04/09), p. 324-325.

204 Ibid, p. 325.

> Concierge care is also known as "luxury health care," "retainer medicine," "personalized health care," and "boutique medical practices."
>
> ***Jennifer Russano, 2005.***

Additionally, in a different subgenre of concierge healthcare services, rather than being used to increase physician salaries, retainer fees may be used by hospitals and primary care facilities to subsidize primary care practice and support the continued care of poorer patients.[205]

RETAIL CLINIC MODEL

As emergency and urgent care departments become increasingly saturated and demand for primary care services escalates, retail clinics likely will continue to serve as remediation by providing a "new model for urgent care" to patients.[206] ." These "convenient care clinics" are located in pharmacy, discount, or grocery retail chains and often are staffed by nurse practitioners or physician assistants.[207]

While scope of practice varies by state and location, mainly due to the competitive, regulatory, and technological implications that influence demand and community need, the general range of permitted services will remain fairly narrow in many cases.[208] This is largely due to the fact that the clinic model is contingent upon quick patient throughput, self-sufficient and minimal staffing, low prices, and simple software solutions that can manage a limited range of medical diagnoses and still process the information efficiently.[209] As a result, retail clinics "…require no appointments, are open on weekends and evenings, report little waiting time, and offer services limited to immunizations and treatment of minor acute conditions."[210] Although concerns have surfaced about cost, quality, and delivery of retail care services, recent findings have shed a positive light on this new facet of primary and preventive care.[211] In one study, Dr. Ateev Mehrotra et al. found ten leading reasons for retail clinic visits: (1) upper respiratory infection, (2) sinusitis or bronchitis, (3) pharyngitis, (4) immunization, (5) otitis media or externa, (6) conjunctivitis, (7) urinary tract infection, (8) screening lab tests or blood pressure checks, (9) other preventive care, and (10) other care services not listed. These visits accounted for 13% of adult and 30% of pediatric primary care physician visits, as well as 12% of emergency

205 Ibid, p. 323-324.

206 "Retail Clinics Provide Quality Routine Care for Less" Kaiser Health News Daily Report, September 15, 2009, http://www.kaiserhealthnews.org/Daily-Reports/2009/September/15/Retail-Clinics.aspx (Accessed 12/15/09); "Comparing Costs and Quality of Care at Retail Clinics with That of Other Medical Settings for 3 Common Illnesses" By Ateev Mehrotra et al., Annals of Internal Medicine, Vol. 151, No. 5 (September 2009), http://www.annals.org/content/151/5/321.full.pdf+html?sid=02d27e1d-a2e0-4a01-a599-8f12a602f533 (Accessed 05/20/10), p. 321.

207 "Retail Clinics, Primary Care Physicians, and Emergency Departments: A Comparison of Patients' Visits" By Ateev Mehrotra, et al., Health Affairs Vol. 27, No. 5, September/October 2008, p. 1272; "Retail Clinics: An Emerging Source of Health Care for Children" By C.S. Mott Children's Hospital, et al., C.S. Mott Children's Hospital National Poll on Children's Health, Vol. 4, No. 3, August 11, 2008, p. 1.

208 "Health Care in the Express Lane: The Emergence of Retail Clinics" By Mary Kate Scott and Scott & Company, The California HealthCare Foundation, July 2006, p. 11.

209 Ibid.

210 "Comparing Costs and Quality of Care at Retail Clinics with That of Other Medical Settings for 3 Common Illnesses" By Ateev Mehrotra et al., Annals of Internal Medicine, Vol. 151, No. 5, September 2009, http://www.annals.org/content/151/5/321.full.pdf+html?sid=02d27e1d-a2e0-4a01-a599-8f12a602f533 (Accessed 5/20/10), p. 321.

211 Ibid.

department visits.[212] Further, the study showed that these retail clinics were providing primary care services to an otherwise underserved population.[213]

> Retail clinics, also known as "convenient care clinics," are located in pharmacy, discount, or grocery retail chains.
>
> ***Ateev Mehrotra, et al., September/October 2008); C.S. Mott Children's Hospital, et al. August 11, 2008.***

> Retail clinics provide less costly treatment than physician offices or urgent care centers for three conditions commonly treated in retail settings: otitis media, pharyngitis, and urinary tract infection.
>
> ***Ateev Mehrotra, M.D. et al. September 2009***

In another study, Mehrotra et al. found that retail clinics provide less costly treatment than physician offices or urgent care centers for three conditions commonly treated in retail settings: (1) otitis media, (2) pharyngitis, and (3) urinary tract infection.[214] Additionally, these services were of similar or better quality than services provided in the alternative settings.[215] Retail care patients were equally as likely to receive preventive care services as patients seen in physician offices or urgent care centers.[216]

As of 2011, there were approximately 1,227 retail clinics were in operation, a slight increase from the 1,197 reported as of February 2010.[217] Further, while only 11% of retails clinics were operated by health care organizations in 2008, this percentage increased to 60% (approximately 120 clinics) by 2009. However, notwithstanding the emerging trend of hospital and physician operated clinics, the overwhelming majority of retail clinics in operation as of 2011 were run by retailers who owned the building in which the clinic was located.[218]

Demand for retail clinic services has increased from approximately 1.48 million in 2007 to 5.97 million in 2009, representing a compound annual growth rate of roughly 100 percent.[219] The future feasibility of the retail clinic market will likely result from the degree of autonomy afforded to non-physician (mid-level) providers, as many "profitable" retail clinics are dependent upon these lower-cost providers for the delivery of care.[220] Further, continued success in the

212 "Retail Clinics, Primary Care Physicians, and Emergency Departments: A Comparison of Patients' Visits" By Ateev Mehrotra, et al., Health Affairs Vol. 27, No. 5, September/October 2008, p. 1278-1279.
213 Ibid, p. 1276, 1279, 1281.
214 "Comparing Costs and Quality of Care at Retail Clinics with That of Other Medical Settings for 3 Common Illnesses" By Ateev Mehrotra et al., Annals of Internal Medicine, Vol. 151, No. 5, September 2009, http://www.annals.org/content/151/5/321.full.pdf+html?sid=02d27e1d-a2e0-4a01-a599-8f12a602f533 (Accessed 5/20/10), p. 321, **326**.
215 Ibid, p. 326.
216 "Comparing Costs and Quality of Care at Retail Clinics with That of Other Medical Settings for 3 Common Illnesses" By Ateev Mehrotra et al., Annals of Internal Medicine, Vol. 151, No. 5, September 2009, http://www.annals.org/content/151/5/321.full.pdf+html?sid=02d27e1d-a2e0-4a01-a599-8f12a602f533 (Accessed 5/20/10), p. 326.
217 "The Advance of the Retail Clinic Market: The Liability Risk Physicians May Potentially Face When Supervising or Collaborating with Other Professionals" By Christopher M. Burkle, MD, JD, Mayo Clinic Proceedings, 86(11), November 2011, p. 1086.
218 Ibid, p. 1087.
219 "Visit to Retail Clinics Grew Fourfold From 2007 to 2009, Although Their Share of Overall Outpatient Visits Remains Low" By Attev Mehotra and Judith R. Lave, Health Affairs, Vol. 31, No. 9 (2012), p. 2124, http://content.healthaffairs.org/content/early/2012/08/14/hlthaff.2011.1128.full.html (Accessed 3/20/13).
220 "The Advance of the Retail Clinic Market: The Liability Risk Physicians May Potentially Face When Supervising or Collaborating with Other Professionals" By Christopher M. Burkle, MD, JD, Mayo Clinic Proceedings, 86(11), November 2011, p. 1086-1087.

retail clinic marketplace will likely depend on: (1) whether retail clinics can continue to "dismiss" concerns over the quality of care delivered at these facilities and (2) whether retail clinics are able to continue to provide patients with convenient and cost-effective access to healthcare services, particularly among newly insured individuals who may seek to obtain primary care services in a "traditional" office-based setting once they are no longer paying for primary care services out-of-pocket.[221]

MEDICAL HOME MODEL

Conceptualized by the American Academy of Pediatrics in the late 1960s, the medical home has since transformed into a healthcare delivery model that is patient-centric, primary care driven, and targeted at payment reform.[222] As discussed in Chapter 2 of *An Era of Reform—The Four Pillars*, seven principles have been established by the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Osteopathic Association in defining what constitutes the medical home model: (1) a personal physician; (2) physician-directed medical practice; (3) whole person orientation; (4) coordinated or integrated care; (5) promotion of quality and safety; (6) enhanced access; and (7) appropriate payment.[223] In a study of four pioneering medical home practices, three key features were identified: "(1) an exceptional form of individualized caring tailored to preventing ED use and unplanned hospitalization for chronic illnesses; (2) efficient service provision; and (3) careful selection of, and coordination with medical specialists."[224] The medical home model empowers practices to promote primary and preventive care services (which are a growing focus in the modern healthcare market) in an effort to maximize efficiency through the efficient utilization of manpower resources, particularly independent non-physician practitioners, and the reevaluation of the role of specialty medicine, including eliminating the overuse of specialty services.[225] Unfortunately, widespread and successful implementation of medical home programs targeting improved effectiveness, safety, timeliness, and quality *as well as* reduced cost has yet to be seen.[226] However, Medicare is experimenting with the medical home model through its Medicare Medical Home Demonstration Project launched in 2007,[227] as well as its Comprehensive Primary Care Initiative, launched in 2011.[228]

221 "Visit to Retail Clinics Grew Fourfold From 2007 to 2009, Although Their Share of Overall Outpatient Visits Remains Low" By Attev Mehotra and Judith R. Lave, Health Affairs, Vol. 31, No. 9 (2012), p. 2127. http://content.healthaffairs.org/content/early/2012/08/14/hlthaff.2011.1128.full.html (Accessed 3/20/13).

222 "Joint Principles of the Patient-Centered Medical Home" American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association, March 2007, http://www.medicalhomeinfo.org/joint percent20Statement.pdf (Accessed 10/02/09) p. 3; "Measuring The Medical Home Infrastructure In Large Medical Groups" By Diane R. Rittenhouse et al., Health Affairs, Vol. 27, No. 5, September/October 2008, p. 1246-1247.

223 "Joint Principles of the Patient-Centered Medical Home" American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association, March 2007, http://www.medicalhomeinfo.org/joint percent20Statement.pdf (Accessed 10/02/09) p. 1-2.

224 "American Medical Home Runs: Four Real-Life Examples That Show a Better Way to Substantial Savings" By Arnold Milstein and Elizabeth Gilbertson, Health Affairs, Volume 28, Number 5, September/October 2009, p. 1319.

225 Ibid, p. 1319-1322.

226 Ibid, p. 1318.

227 "Details for Title: Medicare Medical Home Demonstration" Centers for Medicare & Medicaid Services, 4/14/2011, http://www.cms.gov/Medicare/Demonstration-Projects/DemoProjectsEvalRpts/Medicare-Demonstrations-Items/CMS1199247.html (Accessed 4/7/2015).

228 "Fact Sheet: Comprehensive Primary Care Initiative" Centers for Medicare & Medicaid Services, 8/22/2012, http://innovation.cms.gov/Files/fact-sheet/Comprehensive-Primary-Care-Initiative-Fact-Sheet.pdf (Accessed 4/7/2015), p. 1.

> Conceptualized by the American Academy of Pediatrics in the late 1960s, the "medical home" has since transformed into a healthcare delivery model that is patient-centric, primary care driven, and targeted at payment reform.
>
> ***Diane R. Rittenhouse et al., September/October 2008;***
> ***American Academy of Family Physicians, the American Academy of Pediatrics, March 2007.***

BUNDLED PAYMENT MODEL

As discussed in Chapters 2 and 4 of *An Era of Reform—The Four Pillars*, legislators have turned to bundling institutional and professional charges as a means of placing downward pressure on Medicare expenditures.[229] The Centers of Medicare and Medicaid Services (CMS) has launched a pilot program utilizing the bundled payment model, called the Acute Care Episode (ACE) Demonstration project, to assess the bundling of payments received for both physician and hospital services for certain episodes of cardiovascular or orthopedic care.[230] The ACE demonstration project models the effective integration of bundled reimbursement methods into a healthcare practice in order to increase cost savings and continuity of care among Part A and Part B providers.[231] By realigning physician and hospital incentives through reimbursement techniques such as bundling, CMS hopes to improve both the quality and the efficiency of care provided to Medicare and Medicaid participants.[232] This three-year pilot program will replace the traditional Medicare physician fee schedule for the designated episodes of care, assigning a global payment to cover all Part A and Part B services.[233] Participating sites, known as value-based care centers, are given the opportunity to:

> "develop efficiencies in the care they provide to beneficiaries through increasing market share, quality improvement in clinical pathways, improved coordination of care among specialists, and 'gainsharing'…or provider incentive programs, (which) allow physicians and hospitals to share remuneration for implementing and coordinating improvements in efficiency and quality."[234]

229 "CMS Announces Demonstration to Encourage Greater Collaboration and Improve Quality Using Bundled Hospital Payments" Centers for Medicare & Medicaid Services, Press Release (May 16, 2008), http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=3109&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=1%2C+2%2C+3%2C+4%2C+5&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date (Accessed 12/15/09).

230 "Acute Care Episode Demonstration Fact Sheet" Centers for Medicare & Medicaid Services, March 20, 2009, http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/ACEFactSheet.pdf (Accessed 06/01/09).

231 "CMS Announces Demonstration to Encourage Greater Collaboration and Improve Quality Using Bundled Hospital Payments" Centers for Medicare & Medicaid Services, Press Release (May 16, 2008), http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=3109&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=1%2C+2%2C+3%2C+4%2C+5&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date (Accessed 12/15/09).

232 "CMS Announces Demonstration to Encourage Greater Collaboration and Improve Quality Using Bundled Hospital Payments" Centers for Medicare & Medicaid Services, Press Release (May 16, 2008), http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=3109&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=1%2C+2%2C+3%2C+4%2C+5&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date (Accessed 12/15/09).

233 "Acute Care Episode Demonstration Fact Sheet" Centers for Medicare & Medicaid Services, March 20, 2009, http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/ACEFactSheet.pdf (Accessed 06/01/09).

234 "CMS Announces Demonstration to Encourage Greater Collaboration and Improve Quality Using Bundled Hospital Payments" Centers for Medicare & Medicaid Services, Press Release (May 16, 2008), http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=3109&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=1%2C+2%2C+3%2C+4%2C+5&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date (Accessed 12/15/09).

CO-MANAGEMENT

Another avenue toward physician alignment with hospitals, short of employment, is a co-management arrangement whereby hospitals engage physicians to manage the daily operation of certain hospital specialty service lines.[235] These arrangements incentivize physicians for the development, management, and improvement of quality and efficiency throughout the hospital's service line, using well-defined deliverables and specific performance thresholds,[236] and may be a first step toward the eventual development of stronger affiliations.[237] Co-management agreements have become increasingly popular, perhaps due to their appeal to physicians who strongly value their independence; however, with new reimbursement models some industry stakeholders have questioned whether the level of integration envisioned by co-management agreements is sufficient to reach "true clinical integration."[238]

ACCOUNTABLE CARE ORGANIZATION MODEL

In the same spirit of realigned incentives and professional accountability, recent healthcare reform initiatives have bolstered the adoption and integration of *accountable care organizations (ACOs)*.[239]Many advocates of a reinvented healthcare system believe that ACOs could drive improvements to healthcare in three ways: (1) by encouraging providers to assume accountability for quality and efficiency, (2) by bolstering efforts toward payment reform, and (3) by contributing to the remediation of the sustainable growth rate (SGR) formula.[240] The American Medical Group Association (AMGA) defines an ACO as "an entity that has physician leadership and internal structures, methods and systems for measuring, assessing and advancing the effectiveness and efficiency of patient care; providing a longitudinal, coordinated continuum of health care services, crossing provider settings and that is willing to be held accountable for the clinical results to the communities served."[241] ACOs may range in size, score, infrastructure, or governance, exhibiting any array of attributes, ownership, or integration.[242] Five types of organizations have been identified as entities that could function independently as ACOs or as part of ACOs: (1) IPAs or primary care physician groups, (2) multispecialty groups, (3) hospital medical staff organizations, (4) PHOs, or (5) IDSs.[243]

235 "A Guide to Physician Integration Models for Sustainable Success" American Hospital Association, September 2012, http://www.hpoe.org/Reports-HPOE/guide_to_physician_integration_models_for_sustainable_success.pdf (Accessed 5/19/2014), p 17; "What in the World is Medical Co-Management?" By John Erickson, Physicians Practice, October 14, 2011, http://www.physicians practice.com/blog/what-world-medical-%E2%80%98co-management%E2%80%99 (Accessed 4/8/15).

236 "A Guide to Physician Integration Models for Sustainable Success" American Hospital Association, September 2012, http://www.hpoe.org/Reports-HPOE/guide_to_physician_integration_models_for_sustainable_success.pdf (Accessed 5/19/2014), p 17.

237 "What in the World is Medical Co-Management?" By John Erickson, Physicians Practice, October 14, 2011, http://www.physicians practice.com/blog/what-world-medical-%E2%80%98co-management%E2%80%99 (Accessed 4/8/15).

238 "The Value of Physician Comanagement Agreements" By Nicholas Colyvas et al., American Academy of Orthopaedic Surgeons, August 2014, http://www.aaos.org/news/aaosnow/aug14/managing5.asp (Accessed 4/8/15); see Chapter 2 of *An Era of Reform—The Four Pillars*.

239 Discussed further in Chapters 2 and 6 of *An Era of Reform—The Four Pillars*.

240 "Accountable Care Organizations: Lynchpin for Reform" American Medical Group Association, 2009, http://www.amga.org/ advocacy/briefs/2009/aco.pdf (Accessed 12/15/09).

241 Ibid.

242 Ibid.

243 "Health Care Reform Requires Accountable Care Systems" By Stephen Shortell and Lawrence Casalino, Journal of the American Medical Association, Vol. 300, No. 1, (July 2, 2008), Accessed at http://jama.ama-assn.org/cgi/content/full/300/1/95 (Accessed 5/20/10), p. 95.

Although a certain measure of structural flexibility is afforded to healthcare organizations under the ACO model, certain characteristics are deemed essential.[244] ACOs must be able to provide patients with a continuum of care across a variety of settings.[245] ACOs must be supported and sustained by dynamic, collaborative teams in order to preserve a fluid continuum of care.[246] These teams may include primary care physicians, nurse practitioners, specialists, and other independent non-physician providers, as well as hospitals, nursing homes, ambulatory surgery centers, or any other healthcare enterprise, provider, or entity.[247] This model maintains that collaboration is imperative to developing effective initiatives tailored to meet quality and efficiency goals, measure progress, and reassess objectives.[248] Unlike the medical home model, wherein a single organization assumes responsibility for managing patient healthcare providers and efficiency of continued care, [249] the ACO model requires patient care coordination between many health professionals who must work collaboratively to provide services.[250] In addition to preserving and managing the continuum of care, ACOs also must exhibit prospective budget planning and resource allocation.[251] Lastly, the organization must be large enough to support thorough, accurate, and meaningful performance measurements.[252]

Several incentives may be offered to healthcare providers who join ACOs, as well as private pay patients seeking care from ACOs.[253] Healthcare providers may benefit from (1) supplementary physician payment updates, (2) capitated payments, (3) pay-for-performance initiatives, and (4) gainsharing opportunities.[254] ACO patients may enjoy reduced co-insurance or even lower deductibles,[255] as well as presumably enhanced quality of care and improved patient outcomes.

CONCLUSION

The organizational structure of the healthcare industry is rapidly changing to include a growing number of EHOs and provider relationships. Although managed care served to spark the development of EHOs, initiatives in healthcare reform continue to fuel the proliferation and diversification of these innovatively organized enterprises. It is expected that the impending demand and changes in healthcare will further accelerate the implementation of successful EHO models by healthcare professional practice providers.

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244 "Can Accountable Care Organizations Improve the Value of Health Care By Solving the Cost and Quality Quandries?" By Kelly Devers and Robert Berenson, Timely Analysis of Immediate Health Policy Issues, Robert Wood Johnson Foundation and Urban Institute, October 2009, p. 2.

245 Ibid.

246 "Health Care Reform Requires Accountable Care Systems" By Stephen Shortell and Lawrence Casalino, Journal of the American Medical Association, Vol. 300, No. 1, (July 2, 2008), Accessed at http://jama.ama-assn.org/cgi/content/full/300/1/95 (Accessed 5/20/10), p. 95.

247 Ibid.

248 "MedPAC Probes Effectiveness of Accountable Care Organizations" By Jane Norman, Washington Health Policy Week in Review, April 20, 2009, http://www.commonwealthfund.org/Content/Newsletters/Washington-Health-Policy-in-Review/2009/Apr/April-20-2009/MEDPAC-Probes-Effectiveness-of-Accountable-Care-Organizations.aspx (Accessed 11/13/09).

249 "Creating Accountable Care Organizations: The Extended Hospital Medical Staff" By Elliot Fisher et al, Health Affairs Vol. 26, No. 1 (December 5, 2006) http://content.healthaffairs.org/cgi/reprint/26/1/w44 (Accessed 05/20/10), p. w45, w53.

250 "Medical Homes and Accountable Care Organizations: If We Build It, Will They Come?" Academy Health, 2009, http://www.academyhealth.org/files/publications/RschInsightMedHomes.pdf (Accessed 4/7/2015), p. 2.

251 "Can Accountable Care Organizations Improve the Value of Health Care By Solving the Cost and Quality Quandaries?" By Kelly Devers and Robert Berenson, Timely Analysis of Immediate Health Policy Issues, Robert Wood Johnson Foundation and Urban Institute, October 2009, p. 2.

252 Ibid.

253 "Health Care Reform Requires Accountable Care Systems" By Stephen Shortell and Lawrence Casalino, Journal of the American Medical Association, Vol. 300, No. 1, July 2, 2008, Accessed at http://jama.ama-assn.org/cgi/content/full/300/1/95 (Accessed 5/20/10), p. 97.

254 Ibid.

255 Ibid.

Key Sources

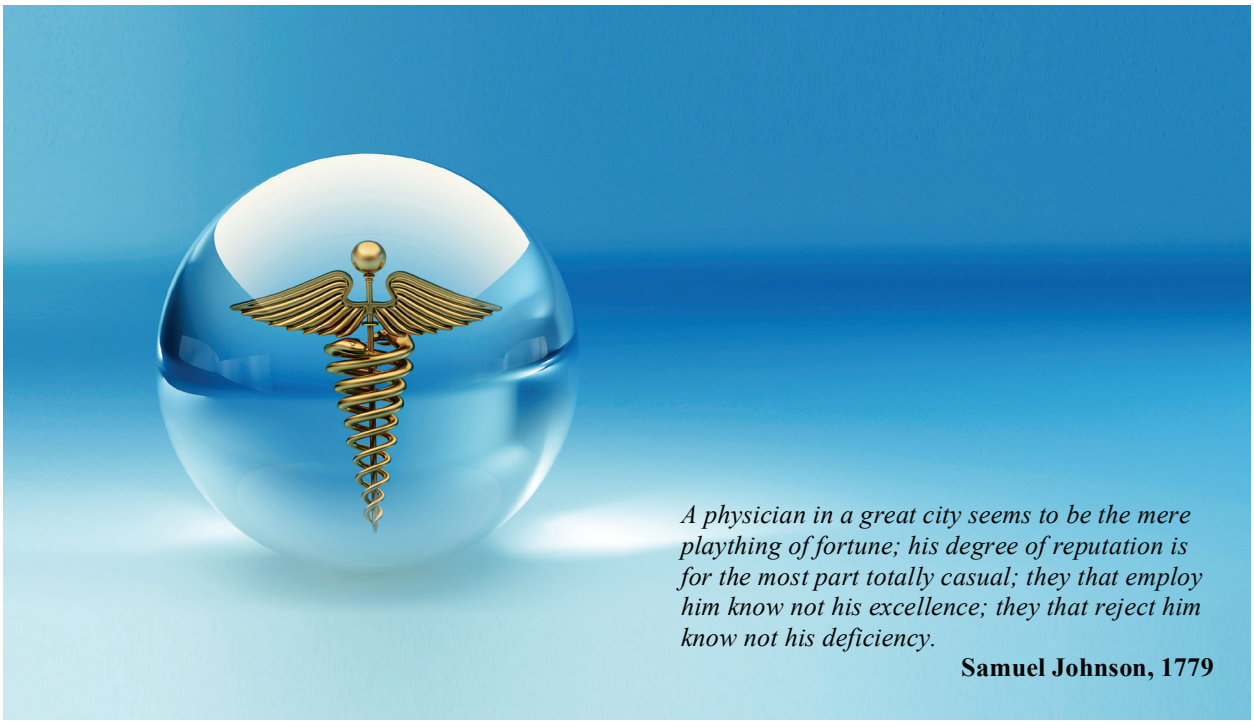
Key Source	Description	Citation	Website
U.S. Department of Health and Human Services, National Center for Disease Statistics	"As the Nation's principal health statistics agency, we compile statistical information to guide actions and policies to improve the health of our people. We are a unique public resource for health information - a critical element of public health and health policy."	"About the National Center for Health Statistics" National Center for Health Statistics, January 20, 2011, http://www.cdc.gov/nchs/about.htm (Accessed 4/8/15).	http://www.cdc.gov/nchs/
Health Resources and Services Administration	"The Health Resources and Services Administration (HRSA), an agency of the U.S. Department of Health and Human Services, is the primary Federal agency for improving access to health care by strengthening the health care workforce, building healthy communities and achieving health equity."	"About HRSA" Health Resources and Services Administration, http://www.hrsa.gov/about/ (Accessed 4/8/15).	www.hrsa.gov
Centers for Medicare and Medicaid Services (CMS)	CMS administers the Medicare, Medicaid, and CHIP programs. CMS is responsible for setting reimbursement rates under Medicare and Medicaid. The CMS website contains important information for beneficiaries of these programs, as well as for guidelines for providers.	"Centers for Medicare and Medicaid Services" Centers for Medicare and Medicaid Services, U.S. Department of Health and Human Services, http://www.cms.gov/ (Accessed 4/1/15).	www.cms.hhs.gov

Associations

Type of Organization	Professional Association	Description	Citation	Contact Information
National	American Hospital Association (AHA)	The mission of AHA is to "advance the health of individuals and communities. The AHA leads, represents and serves hospitals, health systems and other related organizations that are accountable to the community and committed to health improvement."	"Vision & Mission," American Hospital Association, http://www.aha.org/about/mission.shtml	American Hospital Association 155 N. Wacker Dr. Chicago, IL 60606 Phone: 312-422-3000 www.aha.org
National	Federation of American Hospitals (FAH)	"The Federation of American Hospitals (FAH) is the national representative of investor-owned and managed community hospitals and health systems throughout the United States."	"Mission Statement," Federation of American Hospitals, www.fah.org/fahCMS/WhoWeAre/MissionStatement.aspx (accessed March 4, 2010).	Federation of American Hospitals 750 9th Street, NW, Suite 600 Washington, DC 20001 Phone: 202-624-1500 www.fah.org
National	Medical Group Management Association (MGMA)	"MGMA provides the essential education, legislative information, and data and career resources to help improve patient services and operational efficiencies."	"Who We Are" Federation of American Hospitals, April 8, 2015, http://www.fah.org/fahcms/WhoWeAre.aspx (Accessed 4/8/15).	Medical Group Management Association 104 Inverness Terrace East Englewood, CO 80112-5306 Phone: 303-799-1111 or 877-275-6462 E-mail: support@mgma.com www.mgma.com
National	American Health Lawyers Association (AHLA)	The AHLA website (Health Lawyers) "provides resources to address the issues facing its active members who practice in law firms, government, in-house settings and academia and who represent the entire spectrum of the health industry: physicians, hospitals and health systems, health maintenance organizations, health insurers, life sciences, managed care companies, nursing facilities, home care providers, and consumers."	"About AHLA: Our Mission," www.healthlawyers.org/About/WhoWeAre/Pages/default.aspx (Accessed 4/1/15).	American Health Lawyers Association 1025 Connecticut Avenue, NW Suite 600 Washington, DC 20036 Phone: 202-833-1100 Fax: 202-833-1105 E-mail: n/a www.healthlawyers.org/Pages/Default.aspx

Chapter 7

Physician Practices



A physician in a great city seems to be the mere plaything of fortune; his degree of reputation is for the most part totally casual; they that employ him know not his excellence; they that reject him know not his deficiency.

Samuel Johnson, 1779

KEY TERMS

Age-Related Macular Degeneration (AMD)
Continuing Medical Education or Maintenance of Certification
Coronary Artery Bypass Grafting
Diabetic Retinopathy
"Dry" AMD
Emergency Care Physicians
Endoscopic Sinus Surgery
Glaucoma
Hospitalists
Intensivists
Medical College Admissions Test
Physiatrists
Primary Care Practitioners
Residents
Self-Designated Practice Specialty
United States Medical Licensing Examination
"Wet" AMD

Key Concept	Definition	Source Location	Concept Mentioned on Page #
Physician Training Requirements	(1) Completion of medical school, (2) residency training, (3) licensure, (4) specialization and certification, and (5) continuing medical education.	"Becoming a Physician," the American Medical Association, 2009, www.ama-assn.org/ama/pub/education-careers/becoming-physician.shtml (accessed July 20, 2009).	314
United States Medical Licensing Examination	"The USMLE assesses a physician's ability to apply knowledge, concepts, and principles, and to demonstrate fundamental patient-centered skills, that are important in health and disease and that constitute the basis of safe and effective patient care."	"About USMLE" United States Medical Licensing Examination, 2009, http://www.usmle.org/General_Information/general_information_about.html (Accessed 10/01/09).	318
Requirements for AOA Certification of D.O.'s Certified by ABMS	(1) Certification by the ABMS and completion of residency training prior to submitting the application, (2) Good standing as an American Osteopathic Association member, and (3) maintain continuing medical education (CME) hours to fulfill AOA requirements.	"Resolution 56: Certification Eligibility for ABMS-Certified DOs" American Osteopathic Association, https://www.osteopathic.org/inside-aoa/Education/postdoctoral-training/Documents/resolution-56-certification.pdf (Accessed 4/13/15).	308
Self-Designated Practice Specialty (SDPS) Certification Categories	A physician's area of expertise is described by the AMA as "the specialty which he/she has chosen to designate for himself/herself."	"American Medical Association Self Designated Practice Specialty Definitions" American Medical Association, January 2003, http://www.mmslists.com/definitionspdf/AMA percent20 Specialty percent20Definitions.pdf (Accessed 07/20/09).	319
Physicians' Practice Arrangement (PPA) Questionnaire Question Categories	The American Medical Association's (AMA's) PPA questionnaire describes physician practices according to three categories (1) major professional activity, (2) SDPS, and (3) present employment.	"Physician Characteristics and Distribution in the US" 2010 Edition, American Medical Association: Chicago, IL, 2010, p. xvi-xvii.	309
Major Professional Activity Classification	Classification based on whether a physician is primarily engaged in patient care or non-patient care.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xvii.	309
Patient Care Classification	Divided between office-based practices and hospital-based practices.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xvii.	309
Office-Based Practices	Any physician who practices in affiliation with a nonhospital healthcare enterprise.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xvii.	309
Hospital-Based Practices	All physicians under contract with hospitals providing patient care, including physicians in residency training and full-time members of hospital staffs.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xvii.	310
Medical Teaching	This category includes physicians that instruct in medical schools, hospitals, nursing schools, or other institutions of higher learning.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xvii.	312
Medical Research	Physicians employed to conduct funded or unfunded research (including fellowship programs) for the purposes of developing new medical knowledge.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xvii.	312

Key Concept	Definition	Source Location	Concept Mentioned on Page #
Other activity	This residual categorization includes all physicians employed by other subsectors of the healthcare industry, including, among other entities, insurance carriers, pharmaceutical companies, corporations, voluntary organizations, medical societies, associations, grants, international entities, and foreign countries.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xviii.	312
Inactives	All physicians who are retired, semi-retired, working twenty or fewer hours a week for any indicated reason, or temporarily not practicing are classified as inactive.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xviii.	312
Present Employment	The various classification options under the category "present employment" are self-employed; solo practice; two-physician practice; group practice; health maintenance organization; medical school; nongovernment hospital; city, county, or state government; federal government; *locum tenens*; other patient care; and other non-patient care.	"Physician Characteristics and Distribution in the US 2009 Edition," American Medical Association, 2009, p. xvi.	313
Association of American Medical Colleges Physician Specialty Categories	(1) Primary care, (2) Medical specialties, and, (3) Surgical specialties	"Physician Supply and Demand Through 2025: Key Findings" American Association of Medical Colleges, https://www.aamc.org/download/426260/data/physiciansupplyanddemandthrough2025keyfindings.pdf (Accessed 4/13/15).	323–234
Primary Care Categories	(1) General practice and the specialty areas of (2) family practice, (3) internal medicine, (4) pediatrics, and (5) obstetrics and gynecology	"Physician Characteristics and Distribution in the US" 2009 Edition, American Medical Association: Chicago, IL, 2009, p. xviii.	323–324
The Distinction Between Primary and Principal Care	For many Americans, primary care encompasses the larger portion of their medical care. However, patients suffering from chronic diseases rely more heavily upon the care of their specialist, who is their principal care provider.	"The US health care system: Part 1: Our current system," by M.R. Nuwer, G. J. Esper, P. D. Donofrio, J.P. Szaflarski, G.L. Barkley, and T. R. Swift, Neurology, Vol. 71, (2008), p. 1911.	349

OVERVIEW

For nearly three decades, the healthcare industry has become increasingly consolidated, and a growing number of integration methods have emerged. Simultaneously, competition between various provider sectors (for example, hospital- and office-based practices and practitioners of a ll kinds) has intensified.[1] Identifying the various roles assumed by physicians within this integration, or competition, continuum is imperative to understanding the dynamics of the U.S. healthcare industry. Beyond the unique requirements, scope, complexities, and trends of physician specialization and subspecialization, certain characteristics exist that are common to all physician professional practices.

1 "Health Care USA: Understanding its Organization and Delivery" By Harry A. Sultz and Kristina M. Young, Sixth Edition, Boston, MA: Jones and Bartlett Publishers, 2009, p. 218-219.

The requirements and practice scope of the two prominent schools of medicine (that is, allopathic and osteopathic), discussed in Chapter 5: *Organizational Structure*, also share common characteristics, and their respective associations and certifying boards parallel each other (see Table 7-1 for a side-by-side comparison of allopathic and osteopathic medical training, which is discussed in the *Education and Training* sections below). The manner by which these two schools, as well as specialties, subspecialties, and practice dynamics diverge is among the most significant criteria that generally characterize how physician professional practices historically have influenced and have been affected by the dynamic of integration and competition.

Table 7-1: Allopathic Versus Osteopathic Medical Education and Training

Criteria	Allopathic	Osteopathic
Admission into Medical School	Premedical undergraduate coursework, satisfactory grade point averages, and Medical College Admissions Test scores[1]	Premedical undergraduate coursework, satisfactory grade point averages, and Medical College Admissions Test scores[2]
Degree	Medical Doctorate (M.D.)[3]	Doctorate of Osteopathy (D.O.)[3]
Accrediting Body for Medical Schools	Liaison Committee on Medical Education (LCME)[4]	Commission on Osteopathic College Accreditation (COCA)[5]
Number of Medical Schools (US Only)	137[6]	35[7]
Accrediting Body for Residency Programs	Accreditation Counsel for Graduate Medical Education (ACGME)[8]	American Osteopathic Association (AOA) transitioning to Accreditation Counsel for Graduate Medical Education (ACGME)[9]
General Residency Characteristics	Three to eight years of training preparing a physician to practice a specialty[10]	Three to eight years of training preparing a physician to practice a specialty[10]
Licensing Examination	United States Medical Licensing Examination (USMLE)[11]	Comprehensive Osteopathic Medical Licensing Examination (COMLEX)[12]
Organization of Certifying Boards	American Board of Medical Specialties (ABMS)[13]	American Osteopathic Association (AOA)[14]
Number of Certifying Boards	24[13]	18[14]
Certification Requirements	Completion of medical school, plus completion of a residency or fellowship program, a valid licensure, and passage of certification examinations[15]	Completion of medical school, plus completion of a residency or fellowship program, a valid licensure, and passage of certification examinations[16]
Continuing Medical Education	Requirements vary by state[17]	Requirements vary by state[17]

Notes:

1 "The Official Guide to Medical School Admissions: How to Prepare for and Apply to Medical School," Association of American Medical Colleges, 2015, https://www.aamc.org/students/download/180052/data/guidebook_preview.pdf (Accessed 4/13/2015), p. 3.

2 "General Admission Requirements," American Association of Colleges of Osteopathic Medicine, 2015, http://www.aacom.org/become-a-doctor/applying/admissionreq (Accessed 4/13/2015).

3 "Two Kinds of Physicians: Allopathic and Osteopathic," Indiana University, 2007, http://www.hpplc.indiana.edu/medicine/medrestwokinds.shtml (Accessed 4/13/2015).

4 "About the Liaison Committee on Medical Education," Liaison Committee on Medical Education, 2015, http://www.lcme.org/about.htm (Accessed 4/13/2015).

5 "Predoctoral Accreditation," American Osteopathic Association, 2015, http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20accreditation/pages/default.aspx (Accessed 4/13/2015).

6 "Medical School Directory," Liaison Committee on Medical Education, 2015, http://www.lcme.org/directory.htm (Accessed 4/13/2015).

7 "Colleges of Osteopathic Medicine," Commission on Osteopathic College Accreditation, 12/1/2014, http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20accreditation/Documents/current-list-of-colleges-of-osteopathic-medicine.pdf (Accessed 4/13/2015).

8 "About ACGME," Accreditation for Graduate Medical Education, 2015, https://www.acgme.org/acgmeweb/tabid/116/About.aspx (Accessed 4/13/2015).

9 The AOA is transitioning its accreditation programs to the ACGME between 7/1/2015 and 6/30/2020. "Postdoctoral Training Approval," American Osteopathic Association, 2015, http://www.osteopathic.org/inside-aoa/accreditation/postdoctoral-training-approval/Pages/default.aspx (Accessed 4/13/2015).

10 "What is a DO?" American Osteopathic Association, 2015, http://www.osteopathic.org/osteopathic-health/about-dos/what-is-a-do/Pages/default.aspx (Accessed 4/13/2015).
11 "About the USMLE," United States Medical Licensing Examination, 2015, http://www.usmle.org/about/ (Accessed 4/13/2015).
12 "Message from the President," National Board of Osteopathic Medical Examiners, 2015, https://www.nbome.org/about.asp (Accessed 4/13/2015).
13 "Who We Are & What We Do," American Board of Medical Specialties, 2015, http://www.abms.org/About_ABMS/who_we_are.aspx (Accessed 4/13/2015).
14 "AOA Specialty Certifying Boards and Conjoint Examination Committees, 2015, http://www.osteopathic.org/inside-aoa/development/aoa-board-certification/Pages/aoa-specialty-boards.aspx (Accessed 4/13/2015).
15 "Steps Toward Initial Certification and MOC," American Board of Medical Specialties, 2015, http://www.abms.org/boardcertification/stepstowardinitialcertificationandmoc/ (Accessed 4/13/2015).
16 "Certification FAQ," American Osteopathic Association, 2015, http://www.osteopathic.org/inside-aoa/development/aoa-board-certification/Pages/certification-faq.aspx (Accessed 4/13/2015).
17 "Continuing Medical Education for Licensure Reregistration," American College of Emergency Physicians, 2013, http://www.acep.org/uploadedFiles/ACEP/CME/CME-State-CME-Requirements_2013.pdf (Accessed 4/13/2015), p. 67-69.

DESCRIPTION AND SCOPE

SCOPE OF PRACTICE

American Medical Association System of Physician Classification

The methods utilized by the American Medical Association (AMA) in its Physicians' Practice Arrangements (PPA) questionnaire, discussed in following sections, mirror the specialty and practice activity system that best characterizes the diverse scope of physician practices.[2]

Professional Activity

The AMA preliminarily categorizes a physician by his or her major professional activity (MPA).[3] MPA classification is based on whether the physician is primarily engaged in patient care or non-patient care.[4]

Patient Care

Physicians in patient care then are divided according to the type of enterprise under which they are employed: office-based practices or hospital-based practices.[5]

Office-Based Practice

As discussed previously, the MPA classification of patient care in office-based practices includes any physician who practices in affiliation with a nonhospital healthcare enterprise.[6] These

2 "Physician Characteristics and Distribution in the US" 2010 Edition, American Medical Association: Chicago, IL, 2010, p. xvi-xvii.
3 Ibid, p. xvii.
4 Ibid, p. xvii.
5 Ibid, p. xvii.
6 Ibid, p. xvii.

physicians may work alone, together with other physicians in their specialties, or in collaboration with a team of practitioners with different specializations.[7]

Hospital-Based Practice

The MPA classification of physicians in hospital-based practices includes all physicians under contract with hospitals providing patient care.[8] This includes physicians in residency training and full-time members of hospital staffs. *Residents* are "any physicians in supervised practice of medicine among patients in a hospital or in its outpatient department, with continued instruction in the science and art of medicine by the staff of the facility."[9] Clinical fellows receiving advanced training in surgical and specialty fields also are classified as residents.[10]

The majority of general and specialty practitioners are found in both hospital- and office-based settings; however, there exists a genre of medical services traditionally provided in the hospital setting, including critical care and emergency services.[11] These areas of medicine focus on emergency and intensive care in both long- and short-term settings for both acute and chronic diseases.[12] Physician professionals who commonly practice critical care, emergency care, or both, include hospitalists, physiatrists, intensivists, and emergency care physicians.[13] The traditional boundaries that confine these specialists to the hospital-based setting seem to be deteriorating due to a changing demand. Demand for emergency services is projected to grow over the next few years due to increased federal funding for Medicare and Medicaid, an increase in the share of the population over the age of 65, increasing per capita disposable income, increasing number of people with health insurance coverage, and the continued prevalence of many chronic conditions (e.g. obesity), all of which lead to greater utilization of emergency services.[14] Furthermore, patients in the United States today value the convenience of services, thus increasing demand for outpatient facilities (e.g. ambulatory surgical centers).[15]

Hospitalists

Hospitalists (also known as inpatient physicians) are physicians who, traditionally, worked solely within the hospital setting.[16] However, the hospital staff dynamic has changed dramatically. With

7 Ibid, p. xvii.
8 Ibid, p. xvii.
9 Ibid, p. xvii.
10 Ibid, p. xvii.
11 "Critical Care Statistics in the United States" Society of Critical Care Medicine, Pamphlet, 2006, http://sccmwww.sccm.org/Documents/WebStatistics PamphletFinalJune06.pdf (Accessed 10/02/09); "The Doctor Is In: Marketing a Freestanding Emergency Care Center" By Adam Nisenson, Active Imagination, Inc., 2009, http://www.marketingforhealthcare.com/content551.html (Accessed 10/02/09).
12 "Critical Care Statistics in the United States" Society of Critical Care Medicine, Pamphlet, 2006, http://sccmwww.sccm.org/Documents/WebStatistics PamphletFinalJune06.pdf (Accessed 10/02/09); "Policy and Position Statements" Association of Emergency Physicians, 2009, http://www.aep.org/policy.asp (Accessed 10/2/09).
13 "Critical Care Statistics in the United States" Society of Critical Care Medicine, Pamphlet, 2006, http://sccmwww.sccm.org/Documents/WebStatistics PamphletFinalJune06.pdf (Accessed 10/02/09); "Policy and Position Statements" Association of Emergency Physicians, 2009, http://www.aep.org/policy.asp (Accessed 10/2/09); "What is a Physiatrist?" American Academy of Physical Medicine and Rehabilitation, 2010, http://www.aapmr.org/condtreat/what.htm (Accessed 05/09/10); "Training a Hospitalist Workforce to address the intensivist shortage in American Hospitals" By Eric M .Siegal et al., Journal of Hospital Medicine, Vol. 40, No. 6 (2012) http://www.icumedicine.com/pdfs/Training_a_hospitalist_workforce.pdf (Accessed 4/10/15), p. 1953.
14 "IBISWorld Industry Report 62149: Emergency & Other Outpatient Care Centers in the US" By Sarah Kahn, IBISWorld, April 2014, p. 5-6.
15 Ibid, p. 7.
16 "Who are Hospitalists?" By Gwen McLean, Pharmaceutical Representative, November 1, 2005, http://pharmrep.findpharma.com/pharmrep/article/articleDetail.jsp?id=197623 (Accessed 10/02/09).

the shift toward specialty medicine, these traditionally primary care physicians are becoming increasingly specialized.[17] Also, hospitalist employment has become increasingly complex, with hospitalists shouldering critical care duties.[18]

Physiatrists

Physiatrists, also referred to as *rehabilitation physicians*, are "experts at diagnosing and treating pain."[19] These pain management professionals are relied upon to restore functionality that may have been lost as a consequence of injury, illness, or disability.[20] They typically work as part of or as leaders of a medical team of experts in the field.[21] Physiatrists complete training in physical medicine and rehabilitation.[22]

Intensivists

Intensivists are physicians trained in the practice of critical care medicine.[23] Because intensive or critical care systems typically are structured in the image of a "multi-professional team model," intensivists are physicians who are board certified in any variety of specialties, including surgery, internal medicine, pediatrics, and anesthesiology.[24] After receiving their specialty certification, they pursue sub-certification in critical care.[25] Specialists who contribute to this multi-professional team will be mentioned at various points in *Medical Specialty Practices*.

Emergency Care Physicians

Emergency care physicians are involved in the practice of emergency medicine, which involves the unscheduled treatment of patients with episodic or acute conditions.[26] These physicians are licensed in emergency medicine, requiring a very wide scope of general education and clinical training.[27] Emergency physicians are found in hospitals, as well as in freestanding urgent care centers, tertiary medical centers, and academic institutions.[28]

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17 "New Twist in Employing Physicians" By Dan Beckham, Hospital and Health Networks, July 5, 2005, http://www.hhnmag.com/hhnmag_app/jsp/article display.jsp?dcrpath=HHNMAG/PubsNewsArticle/data/050705HHN_Online_Beckham&domain=HHNMAG (Accessed 05/04/10).

18 "Training a Hospitalist Workforce to address the intensivist shortage in American Hospitals" By Eric M. Siegal et al., Journal of Hospital Medicine, Vol. 40, No. 6 (2012) http://www.icumedicine.com/pdfs/Training_a_hospitalist_workforce.pdf (Accessed 4/10/15), p. 1953.

19 "What is a Physiatrist?" American Academy of Physical Medicine and Rehabilitation, 2010, http://www.aapmr.org/condtreat/what.htm (Accessed 05/09/10).

20 Ibid.

21 Ibid.

22 Ibid; see *Physical Medicine and Rehabilitation* for a detailed discussion of physiatrists.

23 "Critical Care Statistics in the United States" Society of Critical Care Medicine, Pamphlet, 2006, http://sccmwww.sccm.org/Documents/WebStatistics PamphletFinalJune06.pdf (Accessed 10/02/09).

24 "Critical Care Statistics in the United States" Society of Critical Care Medicine, Pamphlet, 2006, http://sccmwww.sccm.org/Documents/WebStatistics PamphletFinalJune06.pdf (Accessed 10/02/09); "Guiding the Future of Critical Care" Society of Critical Care Medicine, 2009, http://www.sccm.org/About SCCM/Pages/default.aspx (Accessed 10/2/09).

25 "Guiding the Future of Critical Care" Society of Critical Care Medicine, 2009, http://www.sccm.org/AboutSCCM/Pages/default.aspx (Accessed 10/2/09).

26 "Policy and Position Statements" Association of Emergency Physicians, 2009, http://www.aep.org/policy.asp (Accessed 10/2/09).

27 Ibid.

28 Ibid; see *Emergency Medicine* for an in-depth discussion of emergency medicine as a medical specialty..

Other Professional Activity (Non-patient Care)

Several areas within medicine do not involve patient care: medical teaching, medical research, administration, and other activities.[29]

Medical Teaching

This category includes physicians who engage in medical teaching in schools, hospitals, nursing schools, or other institutions of higher learning.[30] The primary care physician shortage, discussed in the following section, *Primary Care*, may be attributed, in part, to the fact that many academic medical centers do not receive adequate educational funding, and they must rely on funds from more lucrative specialties to help train medical students.[31] Consequently, students graduate with a preference for specialty medicine.[32]

Medical Research

Physicians employed to conduct funded or non-funded research for the purposes of pursuing new medical knowledge are classified under this category.[33] Also included are physicians in research fellowship programs, which are not to be confused with accredited residency programs. These physicians mainly focus on non-patient care activities.[34]

Administration

This subset of non-patient care includes all physicians who hold administrative positions, namely at hospitals, healthcare facilities, healthcare clinics or agencies, healthcare groups, or other similar organizations.[35]

Other Activities

This residual category includes all physicians employed by other subsectors of the healthcare industry, including, among other entities, insurance carriers, pharmaceutical companies, corporations, voluntary organizations, medical societies, associations, grants, international entities, and foreign countries.[36]

Inactives

All physicians who are retired, semiretired, working at most twenty hours a week for any indicated reason, or temporarily not practicing are classified as inactive.[37]

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29 "Physician Characteristics and Distribution in the US" 2010 Edition, American Medical Association: Chicago, IL, 2010, p. xvii.
30 Ibid.
31 "Fewer Medical Students Choose Family Medicine in 2009 Match" By Barbara Bein, American Academy of Family Physicians, March 19, 2009, http://www.aafp.org/online/en/home/publications/news/news-now/resident-student-focus/20090319match.html (Accessed 3/27/09).
32 Ibid.
33 "Physician Characteristics and Distribution in the US" 2010 Edition, American Medical Association: Chicago, IL, 2010, p. xvii.
34 Ibid.
35 Ibid.
36 Ibid.
37 Ibid.

Self-Designated Practice Specialties (SPDS)

A physician's area of expertise is described by the AMA as "the specialty which he/she has chosen to designate for himself/herself."[38] These specialty areas are assessed by the AMA in the *Physician's Credentials Update* and are represented by a system of *self-designated practice specialty* (SDPS) codes.[39] Criteria for adding new SDPS codes were established by the AMA Board of Trustees in 1984.[40] A new specialty should be accounted for if it is

(1) A specialty defined by an existing certificate of added qualifications issued by an AMA-recognized medical specialty board,
(2) Contingent with an existing Accreditation Council for Graduate Medical Education (ACGME) accredited residency or subspecialty training program, or
(3) Under exceptional circumstances, not in line with criterion (1) or (2) but which will be considered if AMA needs to maintain records on the number of physicians in that particular field. This is determined when:
    (a) Demand for services exists such that a substantial number of physicians choose to limit their practice accordingly,
    (b) The specialty derives from new concepts in medicine that have strong professional support, and
    (c) The specialty is a distinct and well-defined new area of medicine.[41]

The SDPS codes established at the time of publication stem from forty specialties recognized by the AMA.[42] These specialty areas are addressed later in this chapter, with particular attention paid to the interrelationships among groupings and the options physicians possess for diversifying their practice focus.

Present Employment

In addition to clarifying their general genres for professional activity and specialty areas, physicians are prompted for information about their present employment. As previously discussed, practitioners can provide services in countless practice types that can vary in business structure and organizational dynamic.[43] These characteristic variables are chosen according to what kind of practice the entity wishes to be.[44] In addition to assessing the distribution of physician professional activities and specialties, the PPA questionnaire prompts physicians to include descriptive information related to the type of practice under which they are employed (that is, self-employed; solo practice; two-physician practice; group practice; health maintenance

38 "American Medical Association Self Designated Practice Specialty Definitions" American Medical Association, January 2003, http://www.mmslists.com/ definitionspdf/AMA percent20Specialty percent20Definitions.pdf (Accessed 07/20/09).
39 "Physician Characteristics and Distribution in the US" 2009 Edition, American Medical Association: Chicago, IL, 2009, p. xvii-xix.
40 "American Medical Association Self Designated Practice Specialty Definitions" American Medical Association, January 2003, http://www.mmslists.com/ definitionspdf/AMA percent20Specialty percent20Definitions.pdf (Accessed 07/20/09).
41 "American Medical Association Self Designated Practice Specialty Definitions" American Medical Association, January 2003, http://www.mmslists.com/ definitionspdf/AMA percent20Specialty percent20Definitions.pdf (Accessed 07/20/09).
42 "Physician Characteristics and Distribution in the US" 2010 Edition, American Medical Association: Chicago, IL, 2010, p. xvii.
43 Ibid, p. xviii.
44 Ibid, p. xvii.

organization (HMO); medical school; nongovernment hospital; city, county, or state government; federal government; *locum tenens*; other patient care; and other non-patient care).[45]

EDUCATION AND TRAINING

Medical education in the United States is comprised of (1) medical school, (2) graduate medical education (GME), and (3) continuing medical education.

Students entering U.S. medical schools that are accredited by the Liaison Committee on Medical Education (LCME) are expected to have ample undergraduate coursework in the basic sciences (for example, biology, chemistry, and physics); however, traditional premedical majors are not required.[46] Student acceptance into medical school is contingent upon overall and science-weighted grade point averages, as well as successful completion of the *Medical College Admissions Test*.[47]

Individuals wishing to pursue an osteopathic medical education must meet these requirements as well.[48] Osteopathic schools of medicine are accredited by the Commission on Osteopathic College Accreditation (COCA).[49] As of 2015, thirty COCA-accredited institutions were in operation in the United States.[50]

Medical School

Students who complete four years of education at an LCME-accredited medical school receive a Doctor of Medicine (M.D.) degree.[51] At this time, graduates are eligible to complete any number of residency programs approved by the ACGME.[52]

Students who complete four years at a COCA-accredited osteopathic medical school[53] receive a Doctor of Osteopathy (D.O.) degree.[54] Similar to their allopathic counterparts, osteopathic physicians continue their medical training by pursuing a residency program. Review Table 7-1 for a side-by-side comparison of the educational requirements for allopathic and osteopathic physicians.

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45 Ibid, p. xvii.
46 "Becoming a Physician" American Medical Association, 2009, http://www.ama-assn.org/ama/pub/education-careers/becoming-physician.shtml (Accessed 10/01/09).
47 "Preparing for Medical School" American Medical Association, 2009, http://www.ama-assn.org/ama/pub/education-careers/becoming-physician/medical-school/preparing-medical-school.shtml (Accessed 7/20/09).
48 "Osteopathic Medical Education" American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=ost_ome (Accessed 7/21/09).
49 "Predoctoral Accreditation" American Osteopathic Association, http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20 accreditation/pages/default.aspx (Accessed 4/10/15).
50 "Osteopathic Medical Schools" American Osteopathic Association, http://www.osteopathic.org/inside-aoa/about/affiliates/Pages/ osteopathic-medical-schools.aspx (Accessed 4/10/15).
51 "Preparing for Medical School" American Medical Association, 2009, http://www.ama-assn.org/ama/pub/education-careers/becoming-physician/medical-school/preparing-medical-school.shtml (Accessed 7/20/09).
52 "Becoming a Physician" American Medical Association, 2009, http://www.ama-assn.org/ama/pub/education-careers/becoming-physician.shtml (Accessed 10/01/09).
53 "Colleges of Osteopathic Medicine "American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=sir_college (Accessed 10/02/09).
54 "Accreditation of Colleges of Osteopathic Medicine: COM Accreditation Standards and Procedures" Commission on Osteopathic College Accreditation, July 1, 2014, http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20accreditation/Documents/COM-accreditation-standards-current.pdf (Accessed 4/10/15), 6.1.1.

Residency Training

After graduating from an accredited medical school, physicians continue on to the second level of U.S. medical education (GME). In other words, medical school graduates apply to specialty residency programs (GME programs), which prepare them, as physicians, for independent practice in the specialty of their choice. These medical residency programs are evaluated continuously by the ACGME to ensure that they meet the publicly recognized educational standards that have been established for the medical specialties they target.[55] Programs usually have a duration of three to five years (see remainder of this Chapter), and residents are categorized according to year, for example, post-graduate year one, post-graduate year two, and so forth.

Students are placed into residency programs through the National Resident Matching Program.[56] The duration of a residency program depends on the area of medicine in which it specializes (for example, pediatrics requires three years of training, but general surgery requires five).[57] Although most programs tend to last between three and seven years, more strenuous specialties may require even longer residency periods.[58] Some students pursue a fellowship, which may last one to three years, in addition to their residency. This supplementary subspecialty training is for physicians who wish to become highly specialized in their field.[59] After completing their GME, students are eligible to take the *United States Medical Licensing Examination (USMLE).*[60]

> *Early estimates indicate that, in 2015, 26,252 applicants were matched to post-graduate year 1 residency positions, representing just under half of the total pool of applicants.*[61]

Doctors of Osteopathy must complete a twelve-month internship followed by a residency program approved by the American Osteopathic Association (AOA) in the specialty area of their choice.[62] Depending on the specialty, programs may last two to six years.[63]

55 "ACGME At A Glance" Accreditation Council for Graduate Medical Education, 2009, http://www.acgme.org/acWebsite/newsRoom/newsRm_acGlance.asp (Accessed 10/02/09).
56 "About the NRMP" National Residency Matching Program, August 14, 2009, http://www.nrmp.org/about_nrmp/index.html (Accessed 10/2/09); "Becoming a Physician" American Medical Association, 2009, http://www.ama-assn.org/ama/pub/education-careers/becoming-physician.shtml (Accessed 10/01/09).
57 "Becoming a Physician" American Medical Association, 2009, http://www.ama-assn.org/ama/pub/education-careers/becoming-physician.shtml (Accessed 10/01/09).
58 Ibid.
59 "What Does Fellowship-Trained Mean?" The Orthopaedic Group, PC, http://www.theorthogroup.com/newsletter/v1-2/story1.php (Accessed 4/10/15).
60 "Eligibility for the USMLE Examinations" United States Medical Licensing Examination, http://www.usmle.org/bulletin/eligibility/ (Accessed 4/10/15).
61 "Advance Data Tables: 2015 Main Residency Match" National Resident Matching Program, March 20, 2015, http://www.nrmp.org/wp-content/uploads/2015/03/ADT2015_final.pdf (Accessed 4/8/15), p. 1-2.
62 "Frequently Asked Questions" American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=faq_cons (Accessed 10/2/09); "Osteopathic Medical Education" American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=ost_ome (Accessed 7/21/09).
63 "Osteopathic Medical Education" American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=ost_ome (Accessed 7/21/09).

Accreditation Council for Graduate Medical Education

The ACGME is the accrediting organization for graduate medical education programs in the United States. The ACGME is comprised of twenty-eight review committees: twenty-six for each of the twenty-six medical specialties, one committee assigned to the "transitional" one-year general program, and one committee responsible for institutional review.[64]

Residency Program Accreditation

The ACGME accreditation process is detailed in three documents: (1) *ACGME Policies and Procedures*, (2) *ACGME Institutional Requirements*, and (3) *ACGME Common Program Requirements*.[65] In addition, the ACGME issues its specialty-specific program requirements in various specialty-specific documents.[66]

According to *ACGME Policies and Procedures*, there is a single, electronic application for programs that are seeking their initial ACGME accreditation.[67] These new programs may be reviewed by the ACGME without a site visit.[68] A review committee will then consider the current application for the program; the site visit report (if applicable); the history of the program (if applicable); correspondence that is pertinent to the ACGME review; and other information, as required, in determining accreditation status of the new program.[69] After review of the foregoing information, the review committee may either confer accreditation status on the program or issue citations that the program or institution fails to meet ACGME accreditation standards.[70]

As part of the accreditation process, and after the initial accreditation decision, all programs are reviewed annually by a review committee, which may confer accreditation based on the ongoing compliance of the program with ACGME standards.[71] If a program is awarded a "continued accreditation" status, the program will then be reviewed by the ACGME every ten years.[72]

ACGME Institutional Requirements lists the ACGME required procedures that must be followed by each sponsoring institution, including requirements relating to eligibility and selection of residents, resident educational activities, resident supervision, and program oversight. It also requires each sponsoring institution to form a GME committee, which must meet quarterly to create policies and procedures relating to the sponsoring institution's education of residents.[73]

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64 "ACGME At A Glance" Accreditation Council for Graduate Medical Education, 2009, http://www.acgme.org/acWebsite/newsRoom/newsRm_acGlance.asp (Accessed 10/02/09).

65 "ACGME Institutional Requirements" Accreditation Council for Graduate Medical Education, July 1, 2007, http://www.acgme.org/acWebsite/irc/ irc_IRCpr07012007.pdf (Accessed 02/08/10); "Common Program Requirements" Accreditation Council for Graduate Medical Education, February 11, 2007, http://www.acgme.org/acWebsite/dutyHours/dh_dutyhoursCommonPR07012007.pdf (Accessed 02/08/10); "Policies and Procedures" Accreditation Council for Graduate Medical Education: Chicago, IL, February 10, 2010, http://www.acgme.org/acWebsite/about/ab_ACGMEPolicies Procedures.pdf (Accessed5/4/10).

66 "Program and Institutional Accreditation" Accreditation Council for Graduate Medical Education, https://www.acgme.org/acgmeweb/tabid/83/ProgramandInstitutionalAccreditation.aspx (Accessed 4/10/15).

67 "Policies and Procedures" Accreditation Council for Graduate Medical Education, February 7, 2015, https://www.acgme.org/acgmeweb/Portals/0/ab_ACGMEPoliciesProcedures.pdf (Accessed 4/13/15) p. 84.

68 Ibid.

69 "Policies and Procedures" Accreditation Council for Graduate Medical Education, February 7, 2015, https://www.acgme.org/acgmeweb/Portals/0/ab_ACGMEPoliciesProcedures.pdf (Accessed 4/13/15) p. 85.

70 Ibid.

71 Ibid, p. 86-89.

72 Ibid, p. 90.

73 "ACGME Institutional Requirements" Accreditation Council for Graduate Medical Education, September 28, 2014, https://www.acgme.org/acgmeweb/Portals/0/PDFs/FAQ/InstitutionalRequirements_07012015.pdf (Accessed 4/13/15) p. 3.

ACGME Common Program Requirements details the program guidelines that are common to each ACGME-accredited program. Specialty-specific program guidelines issued by ACGME may require: (1) appointment of a program director to administer the program; (2) compliance with *ACGME Policies and Procedures*; (3) appointment of faculty and staff who meet ACGME qualifications; (4) development of a curriculum that addresses the ACGME competencies; and (5) evaluation of residents, faculty, and the program at regular intervals, as specified by the ACGME.[74]

Residency Program Funding

Funding for residency programs is provided by the federal government, state governments, and other sources, such as grants or endowments.

Federal Funding

The federal government is the largest supporter of GME in the United States. Federal funding of GME is mandated by the Medicare Act of 1965, which requires Medicare to reimburse teaching partly based on the direct graduate medical education (DGME) costs incurred during a base-year.[75] DGME costs include resident and physician compensation and benefits, program administration costs, stipends, and educational activities.[76] Reimbursement for DGME costs was capped by the Balanced Budget Act of 1997, which requires reimbursement to be based on the number of full-time equivalent (FTE) residents reported on or before December 31, 1996.[77]

Because teaching hospitals usually have higher costs of care, the federal government also provides reimbursement for indirect costs by compensating hospitals based on the ratio of FTEs to hospital beds.[78] These indirect medical education (IME) payments include payments for costs such as patient treatment, diagnostic tests, longer patient stays, and teaching responsibilities.[79] IME payments, in effect, are a proxy to account for the "number of factors which may legitimately increase costs in teaching hospitals."[80]

In addition, the federal government also supports GME through disproportionate share payments (DSH) based the number of uninsured patients the hospital treats.[81].

State Funding

States provide the second-largest source of funding for GME.[82] Even though the federal government does not mandate it, almost all states support GME with Medicaid funds.[83] State

74 "ACGME Common Program Requirements" Accreditation Council for Graduate Medical Education, June 23, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/CPRs2013.pdf (Accessed 4/13/15), p. 3-7.
75 "Medicare Direct Graduate Medical Education (DGME) Payments" American Association of Medical Colleges, https://www.aamc.org/advocacy/gme/71152/gme_gme0001.html (Accessed 4/13/15).
76 Ibid.
77 "Medicare Direct Graduate Medical Education (DGME) Payments" American Association of Medical Colleges, https://www.aamc.org/advocacy/gme/71152/gme_gme0001.html (Accessed 4/13/15).
78 "Medicare Indirect Medical Education (IME) Payments" American Association of Medical Colleges, https://www.aamc.org/advocacy/gme/71150/gme_gme0002.html (Accessed 4/13/15).
79 Ibid.
80 Ibid.
81 See Chapter 2 of an *Era of Reform* for a discussion regarding DSH payments.
82 "The Complete Residency Program Management Guide" By Ruth H. Nawotniak, Marblehead, MA: HCPro, Inc, 2009, p. 320.
83 "The Complete Residency Program Management Guide" By Ruth H. Nawotniak, Marblehead, MA: HCPro, Inc, 2009, p. 320; "The Residency Program Director's Handbook" By Robert V. Higgins, Marblehead, VA: HCPro, Inc., 2008, p. 137.

Medicaid support averages 9% of inpatient hospital expenditures per year, which is equal to approximately $2.5 billion each year.[84]

Other Funding Sources

GME funding will vary for each institution, because organizations are all unique in structure. However, several sources of GME funding exist in addition to Medicare and Medicaid funds, including (1) private donors, (2) endowments and trust funds, (3) training and research funds, (4) funds from academic affiliates, (5) grants, (6) money earned from patient care services, and (6) funds mandated by other federal legislation.[85]

The United States Medical Licensing Examination

Rules and regulations for medical licensure vary from state to state; however, all states require physicians to sit for the USMLE, which "…assesses a physician's ability to apply knowledge, concepts, and principles, and to demonstrate fundamental patient-centered skills, that are important in health and disease and that constitute the basis of safe and effective patient care."[86] The results are reported to the state medical boards prior to initial medical licensure.[87] This standardized means of evaluation is sponsored by the Federation of State Medical Boards of the United States (FSMB) and the National Board of Medical Examiners (NBME).[88] The FSMB is comprised of all U.S. allopathic medical boards, as well as fourteen osteopathic medical boards, and, as such, the osteopathic physicians practicing in those fourteen states are subject to the same licensure requirements as their allopathic counterparts.[89] The NBME provides subject examinations to various medical schools throughout the United States.[90] Osteopathic physicians who are not subject to FSMB or NBME examination by way of the USMLE are still required by all fifty states to pass some form of licensing examination.[91]

Physician Specialization and Certification

Certification is considered essential for the practice of medicine because it "demonstrates a doctor's knowledge and skill in a particular medical specialty or subspecialty."[92] Certification follows the processes of receiving a medical degree, completing a residency, and receiving licensure to practice.[93]

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84 "The Complete Residency Program Management Guide" By Ruth H. Nawotniak, Marblehead, MA: HCPro, Inc, 2009, p. 320.
85 "The Complete Residency Program Management Guide" By Ruth H. Nawotniak, Marblehead, MA: HCPro, Inc, 2009, p. 320-21; "The Residency Program Director's Handbook" By Robert V. Higgins, Marblehead, VA: HCPro, Inc., 2008, p. 137-138.
86 "About USMLE" United States Medical Licensing Examination, 2009, http://www.usmle.org/General_Information/general_information_about.html (Accessed 10/01/09).
87 Ibid.
88 "About USMLE" United States Medical Licensing Examination, 2009, http://www.usmle.org/General_Information/general_information_about.html (Accessed 10/01/09).
89 "Member Boards" Federation of State Medical Boards, 2009, http://www.fsmb.org/candidates/memberboards.html (Accessed 05/04/10).
90 "Schools & Residency" National board of Medical Examiners, http://www.nbme.org/Schools/index.html (Accessed 4/13/15); "Subject Examinations" National Board of Medical Examiners, http://www.nbme.org/schools/Subject-Exams/index.html (Accessed 4/13/15); "Medical School Directory" Liaison Committee on Medical Education, http://www.lcme.org/directory.htm (Accessed 4/8/15).
91 "Osteopathic Medical Education" American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=ost_ome (Accessed 7/21/09).
92 "The Highest Standard" American Board of Medical Specialties, http://www.certificationmatters.org/about-board-certified-doctors/the-highest-standard.aspx (Accessed 4/13/15).
93 "Physician Characteristics and Distribution in the US" 2009 Edition, American Medical Association: Chicago, IL, 2009, p. xix.

If a physician is certified, the following three classifications are associated with his or her certification status as it relates to his or her SDPS classification (defined in *Self-Designated Practice Specialties [SPDS]*):

(1) Certification by a corresponding board only (board having the authority to grant certification for that particular SDPS)
(2) Certification by corresponding board and non-corresponding board(s) that do not have the authority to grant certification for that particular SDPS)
(3) Certification by non-corresponding board(s) only.[94]

Physicians can acquire multiple certifications for the purposes of furthering the credibility and specialization of their practice. The American Board of Medical Specialties (ABMS) is an organization of twenty-four approved medical specialty boards.[95] The ABMS coordinates the activities of its member boards and functions as a portal for information related to the specialization and certification of medical practitioners.[96] The ABMS certifies physicians in more than 145 subspecialties, ensuring that they have completed the training programs necessary for their areas of expertise and can demonstrate competence in their specialties or subspecialties through a board executed evaluation.[97] Table 7-2 shows the certification programs offered through each of the twenty-four specialty boards.[98]

Table 7-2: American Board of Medical Specialties (ABMS) Member Board Specialty and Subspecialty Certification

Certifying Boards	Specialty	Subspecialties
American Board of Allergy and Immunology	Allergy and Immunology	n/a
American Board of Anesthesiology	Anesthesiology	Critical Care Medicine
		Hospice and Palliative Medicine
		Pain Medicine
		Pediatric Anesthesiology
		Sleep Medicine
American Board of Colon and Rectal Surgery	Colon and Rectal Surgery	n/a
American Board of Dermatology	Dermatology	Dermatopathology
		Pediatric Dermatology
American Board of Emergency Medicine	Emergency Medicine	Anesthesiology Critical Care Medicine
		Emergency Medical Services
		Hospice and Palliative Medicine
		Internal Medicine-Critical Care Medicine
		Medical Toxicology
		Pain Medicine
		Pediatric Emergency Medicine
		Sports Medicine
		Undersea and Hyperbaric Medicine

(continued)

94 Ibid.
95 "Physician Characteristics and Distribution in the US" 2009 Edition, American Medical Association: Chicago, IL, 2009, p. xix; "Who We Are & What We Do" American Board of Medical Specialties, http://www.abms.org/About_ABMS/who_we_are.aspx (Accessed 7/20/09).
96 "Who We Are & What We Do" American Board of Medical Specialties, http://www.abms.org/About_ABMS/who_we_are.aspx (Accessed 7/20/09).
97 "American Board of Medical Specialties Board Certification Editorial Background" American Board of Medical Specialties, September 4, 2007, http://www.abms.org/News_and_Events/Media_Newsroom/pdf/ABMS_EditorialBackground.pdf (Accessed 07/20/09); "Specialties and Subspecialty Certificates" American Board of Medical Specialties, http://www.abms.org/member-boards/specialty-subspecialty-certificates/ (Accessed 4/13/15).
98 "Specialties and Subspecialty Certificates" American Board of Medical Specialties, http://www.abms.org/member-boards/specialty-subspecialty-certificates/ (Accessed 4/13/15).

Certifying Boards	Specialty	Subspecialties
American Board of Family Medicine	Family Medicine	Adolescent Medicine
		Geriatric Medicine
		Hospice and Palliative Medicine
		Pain Medicine
		Sleep Medicine
		Sports Medicine
American Board of Internal Medicine	Internal Medicine	Adolescent Medicine
		Adult Congenital Heart Disease
		Advanced Heart Failure and Transplant Cardiology
		Cardiovascular Disease
		Clinical Cardiac Electrophysiology
		Critical Care Medicine
		Endocrinology, Diabetes, and Metabolism
		Gastroenterology
		Geriatric Medicine
		Hematology
		Hospice and Palliative Medicine
		Infectious Disease
		Interventional Cardiology
		Medical Oncology
		Nephrology
		Pulmonary Disease
		Rheumatology
		Sleep Medicine
		Sports Medicine
		Transplant Hepatology
American Board of Medical Genetics	Clinical Biochemical Genetics	Medical Biochemical Genetics
	Clinical Cytogenetics	Molecular Genetic Pathology
	Clinical Genetics (M.D.)	
	Clinical Molecular Genetics	
American Board of Neurological Surgery	Neurological Surgery	n/a
American Board of Nuclear Medicine	Nuclear Medicine	n/a
American Board of Obstetrics and Gynecology	Obstetrics and Gynecology	Critical Care Medicine
		Female Pelvic Medicine and Reconstructive Surgery
		Gynecologic Oncology
		Hospice and Palliative Medicine
		Maternal and Fetal Medicine
		Reproductive Endocrinology/Infertility
American Board of Ophthalmology	Ophthalmology	n/a
American Board of Orthopedic Surgery	Orthopedic Surgery	Orthopedic Sports Medicine
		Surgery of the Hand
American Board of Otolaryngology	Otolaryngology	Neurotology
		Pediatric Otolaryngology
		Plastic Surgery Within the Head and Neck
		Sleep Medicine

Certifying Boards	Specialty	Subspecialties
American Board of Pathology	Anatomic Pathology and Clinical Pathology	Blood Banking/Transfusion Medicine
	Pathology—Anatomic	Clinical Informatics
	Pathology—Clinical	Cytopathology
		Dermatopathology
		Neuropathology
		Pathology—Chemical
		Pathology—Forensic
		Pathology—Hematology
		Pathology—Medical Microbiology
		Pathology—Molecular Genetic
		Pathology—Pediatric
American Board of Pediatrics	Pediatrics	Adolescent Medicine
		Child Abuse Pediatrics
		Developmental-Behavioral Pediatrics
		Hospice and Palliative Medicine
		Medical Toxicology
		Neonatal-Perinatal Medicine
		Neurodevelopmental Disabilities
		Pediatric Cardiology
		Pediatric Critical Care Medicine
		Pediatric Emergency Medicine
		Pediatric Endocrinology
		Pediatric Gastroenterology
		Pediatric Hematology-Oncology
		Pediatric Infectious Diseases
		Pediatric Nephrology
		Pediatric Pulmonology
		Pediatric Rheumatology
		Pediatric Transplant Hepatology
		Sleep Medicine
		Sports Medicine
American Board of Physical Medicine and Rehabilitation	Physical Medicine and Rehabilitation	Brain Injury Medicine
		Hospice and Palliative Medicine
		Neuromuscular Medicine
		Pain Medicine
		Pediatric Rehabilitation Medicine
		Spinal Cord Injury Medicine
		Sports Medicine
American Board of Plastic Surgery	Plastic Surgery	Plastic Surgery Within the Head and Neck
		Surgery of the Hand
American Board of Preventive Medicine	Aerospace Medicine	Clinical Informatics
	Occupational Medicine	Medical Toxicology
	Public Health and General Preventive Medicine	Undersea and Hyperbaric Medicine

(continued)

Certifying Boards	Specialty	Subspecialties
American Board of Psychiatry and Neurology	Psychiatry	Addiction Psychiatry
	Neurology	Brain Injury Medicine
	Neurology with Special Qualification in Child Neurology	Child and Adolescent Psychiatry
		Clinical Neurophysiology
		Epilepsy
		Forensic Psychiatry
		Geriatric Psychiatry
		Hospice and Palliative Medicine
		Neurodevelopmental Disabilities
		Neuromuscular Medicine
		Pain Medicine
		Psychosomatic Medicine
		Sleep Medicine
		Vascular Neurology
American Board of Radiology	Diagnostic Radiology	Hospice and Palliative Medicine
	Interventional Radiology and Diagnostic Radiology	Neuroradiology
	Radiation Oncology	Nuclear Radiology
	Medical Physics	Pain Medicine
		Pediatric Radiology
		Vascular and Interventional Radiology
American Board of Surgery	Surgery	Complex General Surgical Oncology
	Vascular Surgery	Hospice and Palliative Medicine
		Pediatric Surgery
		Surgery of the Hand
		Surgical Critical Care
American Board of Thoracic Surgery	Thoracic Surgery	Congenital Cardiac Surgery
American Board of Urology	Urology	Female Pelvic Medicine and Reconstructive Surgery
		Pediatric Urology

Board certification as a Doctor of Osteopathy involves recognition by one of eighteen AOA-approved specialty boards.[99] Once an osteopathic physician has acquired primary certification, he or she may seek subspecialty certification as well. Under Resolution 56, Certification Eligibility for ABMS-Certified D.O.s, osteopathic physicians who meet the eligibility criteria and wish to become certified through one of the AOA member boards may do so.[100] These eligibility criteria include:

(1) Certification by the ABMS and completion of residency training prior to submitting the application,
(2) Good standing as an AOA member, and
(3) Maintenance of continuing medical education (CME) hours to fulfill AOA requirements.[101]

99 "AOA Board Certification" American Osteopathic Association, http://www.osteopathic.org/inside-aoa/development/aoa-board-certification/Pages/default.aspx (Accessed 4/7/15).
100 "Resolution 56: Certification Eligibility for ABMS-Certified DOs" American Osteopathic Association, https://www.osteopathic.org/inside-aoa/Education/postdoctoral-training/Documents/resolution-56-certification.pdf (Accessed 4/13/15).
101 Ibid.

Osteopathic physician applicants are not expected to be members of state or specialty colleges, but may be subject to additional requirements that are set by specialty boards and colleges, and will be subject to fees set by the certifying boards.[102]

Continuing Medical Education

Both allopathic and osteopathic physicians are expected to maintain their certification by way of *continuing medical education* **(***CME*, also known as *maintenance of certification, MOC*).[103] The CME credit requirement per year varies by state, as well as by professional and medical staff organizations.[104] The AOA sets CME requirements that osteopathic physicians must meet every three years.[105]

SPECIALTIES

The American Association of Medical Colleges (AAMC) recognizes three defined physician specialty categories: (1) primary care, (2) medical specialties, and (3) surgical specialties (see Table 7-3).[106] These categories and their constituent specialty areas are addressed in the following sections: *Primary Care Practices, Surgical Specialty Practices*, and *Medical Specialty Practices*.

Table 7-3: Physician Specialties and Representative Current Procedural Terminology (CPT) Codes[107]

Physician Category	Physician Specialties	Representative CPT Codes
Primary Care Practices	General Practice	99213; 99214; G8553; 96372; 99212; 99232; 99308; J1100; G0008; 95165
	Family Practice	99213; 99214; G8553; 99232; G0008; 96372; 85610; G8427; 85025; G9151
	Internal Medicine	99214; 99213; 99232; 99233; G8553; J0878; 99223; J0897; 99308; G0008
	Pediatrics	99213; 90460; 99214; 90461; 90471; 90472; 87880; 99392; 99391; 99393
	Gynecology and Obstetrics	99213; J1050; G0101; 99214; Q0091; 81002; 99396; J0897; 99212; 99000

(continued)

102 Ibid.
103 "Osteopathic Medical Education" American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=ost_ome (Accessed 7/21/09); "CME Information By State" AHC Media, http://www.cmeweb.com/gstate_requirements.php (Accessed 4/13/15).
104 "Osteopathic Medical Education" American Osteopathic Association, 2009, http://www.osteopathic.org/index.cfm?PageID=ost_ome (Accessed 7/21/09).
105 "2013-2015 CME Guide: CME Requirements" American Osteopathic Association, http://www.osteopathic.org/inside-aoa/development/continuing-medical-education/Pages/2013-2015-cme-requirements.aspx (Accessed 4/13/15).
106 "Physician Supply and Demand Through 2025: Key Findings" American Association of Medical Colleges, https://www.aamc.org/download/426260/data/physiciansupplyanddemandthrough2025keyfindings.pdf (Accessed 4/13/15).
107 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014.

Physician Category	Physician Specialties	Representative CPT Codes
Surgical Specialties	General	99213; 99232; 99212; 99214; 99231; 99203; Q9967; 99204; J0878; 99222
	Colon and Rectal	99213; 99203; 46600; 99212; 99214; 99204; 99231; 99232; G8553; 46221
	Neurosurgery	99213; 99214; 99203; 99204; 99212; 99231; 99232; G8427; 63048; 22851
	Ophthalmic	92014; 92015; 99213; 92250; 92012; 92004; 99214; 92083; G8427; 92133
	Orthopedic	J7325; 99213; 20610; J3301; 99214; 99203; 99212; 97110; J1030; J0702
	Otolaryngology	99213; 95165; 95004; 99203; 99214; 69210; 95024; 31575; 95117; G8553
	Plastic	99213; 99212; J3010; 99203; J0585; 99214; J0775; 99202; 99204; 11042
	Thoracic	99213; 99214; Q9967; 99231; 99223; 99232; 99212; 99205; 99204; 99233
	Urology	99213; Q9967; J9155; J0897; 99214; 81003; 51798; 81000; 81002; 81001
Medical Specialties	Allergy/Immunology	95004; 95165; J2357; 95117; 95024; 95115; 99213; 99214; 95044; G8553
	Anesthesiology	00142; 00810; 00740; 99213; 99214; 36620; J3301; 77003; 62311; 76942
	Dermatology	17003; 99213; 17000; 88305; 11100; 99212; 17110; 11101; 99214; G8553
	Emergency Medicine	99285; 99284; 93010; 99283; 99291; G8784; 99213; 99214; J0878; 93042
	Medical Genetics	N/A
	Neurology	J0585; J2323; 99214; 99213; 99232; J0588; G8553; 99215; 95886; 99223
	Nuclear Medicine	Q9967; 78452; 78815; 71010; 77080; 78306; 71020; 78582; 93016; J2785
	Pathology	88305; 88342; 88313; 88312; 88307; 88304; 88112; 88311; 88331; 84165
	Physical Medicine and Rehabilitation	J0585; 99232; 99213; 99214; 99231; 97110; J3301; 99308; 99233; J7325
	Preventive Medicine	99213; Q0138; 99214; J9025; J9264; J0885; J0881; J0897; 99183; G0008
	Psychiatry	90834; 90837; 90832; 96118; 90791; 96101; 96119; 90853; 97110; 90847
	Radiology	Q9967; 71010; 71020; G0202; 70450; 77052; 7025F; 74177; 74176; 74000

INDUSTRY TRENDS

CHARACTERISTICS AND DISTRIBUTION

According to a 2015 AMA report based on 2013 data from *Physician Characteristics and Distribution in the U.S.*, 77.4% of 1,045,910 physician-respondents reported their MPA to be patient care.[108] Of these, 600,863 (74.2%) were office-based, representing 57.4% of the

108 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 8.

physician population.[109] The remaining 25.8% of patient care physicians were hospital-based, representing 19.9% of the physician population.[110]

Physicians aged 45 and younger collectively accounted for 35.9% of the total population.[111] The number of physicians aged 65 and older accounted for 23.1% of the total population.[112] Of this age group, 53.9% were reported as inactive.[113] The number of inactive physicians has increased by 588.5% since 1975.[114] Women represent 31.8% of the physician population, with 333,294 female physicians.[115]

SUPPLY AND DEMAND

From 1980 to 2013, the physician-to-patient ratio across all specialties grew from 202 to 331 per 100,000 people.[116] While areas such as general surgery and radiology saw a slight decrease in per capita ratios, these changes were negligible when compared to the drop in the number of general practitioners per capita from 14.4 per 100,000 in 1980 to 2.1 per 100,000 in 2013.[117]

Specifically, the per capita ratio of office-based physicians to patients grew from 120.6 to 190.1 per 100,000 people.[118] The number of office-based physicians has grown 178.9% from 1975 to 2013, while the number of hospital-based physicians only grew 116.5%.[119] Of the 208,982 physicians who were hospital based in 2013, 117,203 were residents and 91,779 were full-time staff.[120]

The 24.6% decline in the portion of physicians who contribute to medical teaching from 1975 to present is also of significant concern.[121] Despite the fact that the total physician population grew 165.6% from 1975 to 2013 (393,742 total physicians; 652,168 net change), the proportion of physicians engaged in medical teaching decreased from 1.6% of all physicians to 1.2% over the same time period.[122]

Of all specialty and subspecialty areas, internal medicine, including its subspecialties, has remained the largest area since 1975, when it accounted for 13.8% of the total physician population, to 2013, when it accounted for 16.9% of the total physician population.[123] Areas that showed the largest percent growth from 1975 to 2013 include family medicine (668.9%),

109 Ibid.
110 Ibid.
111 Ibid.
112 Ibid.
113 Ibid.
114 Ibid, p. 440.
115 Ibid, p. 8.
116 Ibid, p. 453.
117 Ibid, p. 460.
118 Ibid, p. 460.
119 Ibid, p. 440.
120 Ibid, p. 440.
121 Ibid, p. 440.
122 Ibid, p. 440.
123 Ibid, p. 442.

diagnostic radiology (667.6%), and gastroenterology (503.3%).[124] The areas that endured the greatest percent decline include general practice (-84.2%) and public health (-57.1%).[125]

There has been an 835.2% growth in the number of female physicians, from 35,626 in 1975 to 333,294 in 2013.[126] The distribution of female physicians remains largely weighted in primary care, with the most popular specialty areas being internal medicine (18.9%), pediatrics (14.9%), family medicine (11.1%), and obstetrics and gynecology (7.1%).[127]

Since 1975, the areas experiencing the greatest increase in the number of female physicians include thoracic surgery (7,200.0%), colon and rectal surgery (6,660%), urological surgery (6,293.7%), and family medicine (6,162.3%).[128] Consistent with the rest of the physician population, areas experiencing a decline in the number of female physicians were public health (-30.9%) and general practice (-28.6%).[129] Women represent 31.9% of the total physician population, with 276,077 (82.8%) female physicians in patient care, more than 70% of whom reported office-based employment.[130]

The problems associated with the increasing demands of an aging population are compounded by an aging population of physicians, a decreased emphasis on physician education, and a decreased interest in primary and preventative care. By 2030, it is predicted that greater than 70 million people in the United States will be aged seventy-five or older; this will cause an unprecedented increase in demand, because healthcare beneficiaries aged sixty-five or older require twice as much medical care as those under the age of sixty-five.[131]

HIGHLIGHTS IN THE FOUR PILLARS

The operation and performance of physician practices may be best understood within the context of the four pillars of the healthcare industry. As discussed in the *Introduction* to *An Era of Reform—The Four Pillars*, these four pillars—regulatory, reimbursement, competition, and technology—serve as a framework through which to identify the evolving market conditions of a healthcare enterprise. As this chapter will show, the implications of reimbursement and regulatory environments, an ever-changing competitive climate, and constant improvement and growth in technology continuously influence provider practices, especially in the modern healthcare delivery system. Additionally, differences in reimbursement, regulation, competition, and technology have the capacity to distinguish one specialty or practice entity from another. However, before examining each specialty practice within its own framework, the fundamental components of an overarching framework should be established. In this regard, the construct of the four pillars of the healthcare industry provides an analytical context that translates across all

124 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 441.
125 Ibid.
126 Ibid, p. 444.
127 Ibid, p. 450.
128 Ibid, p. 449.
129 Ibid, p. 449.
130 Ibid, p. 8.
131 "The Complex Dynamics of the Physician Workforce: Projected Supply and Demand through 2025" By Michael J. Dill and Edward S. Salsberg, Center for Workforce Studies, Association of American Medical Colleges, November 2008, p. 13.

physician specialties and practices. Highlights in the four pillars for each physician specialty will be discussed in table 7-25 at the end of this Chapter.

REGULATORY

The healthcare industry possesses a strict body of regulations that sets it apart from all other industry sectors. However, policymakers have been unable to maintain pace with the rapid, significant, and perpetual changes in healthcare delivery, resulting in an inconsistent regulatory scheme. Not only are physician practices subject to different regulations based on the state in which they are located (for example, Certificates of Need [CONs]), they are also subject to differing regulations based on the type of services they provide, resulting in an inconsistent and conditional regulatory framework.

Of particular and recurring interest are legislative and regulatory actions at state and federal levels to restrict physician ownership in ancillary services technical component (ASTC) revenue stream enterprises (for example, ambulatory surgery centers [ASCs], independent diagnostic testing facilities [IDTFs], surgical and specialty hospitals, and so forth). Consequently, independent physicians in private practice are feeling pressured to surrender their professional autonomy and resume employee status under substantial control of hospital systems or face the relegation of receiving only professional fee component revenues. Other regulatory measures affecting physicians include licensure, quality inspections, facility requirements, facilities taxes, state CONs, and anti-kickback and Stark self-referral regulations.[132]

REIMBURSEMENT

A major driver of healthcare competition, technological advancement, national expenditures, and, therefore, regulation is the healthcare reimbursement environment. Specifically, the healthcare industry is driven by the agreed upon rates at which physicians are compensated for their technical and professional services. A notable trend affecting the reimbursement of healthcare services has been the transformation of the method of the payment for those services, with an accelerating movement from the traditional U.S. health coverage system of defined benefits (in which employers provide a package of defined benefits to their employees) to a system of defined contributions (in which employers contribute a set amount and then require employees to decide how much of their health benefit dollars to spend by selecting from a range of benefit plans).[133] This shift is being driven by employers seeking to limit their exposure to the double-digit increases in health insurance premium rates.[134] By proxy, employers are diverting the financial burden and risk associated with health coverage onto their employees. Under this arrangement, employers can limit their contributions at the expense of their employees, who must contribute increasing amounts of their own money to pay for increasing health insurance costs.[135]

132 For more information about the complexities of healthcare regulation, refer to Chapter 3 of *An Era of Reform—The Four Pillars*.

133 "Defined Contribution Health Insurance" By Greg Scandlen, National Center for Policy Analysis, October 26, 2000, https://www.heartland.org/sites/all/modules/custom/heartland_migration/files/pdfs/7662.pdf (Accessed 3/30/15), p. 7.

134 "Comprehensive Medicare Reform: Defined Benefit vs. Defined Contribution" By John F. Sheils and Andrea Fishman, Report for National Coalition on Health Care, Falls Church, VA: Lewin Group, Inc., September 1, 1998, p. 10, 32.

135 Chapter 2 in *An Era of Reform—The Four Pillars* expands on the concept of healthcare professional reimbursement, especially in light of physician practices.

COMPETITION

Recent changes to the regulatory and reimbursement environment have transformed the competitive marketplace for healthcare professionals. More specifically, the introduction of prospective payment systems, physician reimbursement cuts for professional services, and intensified focus on patient quality and transparency initiatives have forced healthcare professionals to look for more efficient ways to provide services, as well as additional sources of revenue and margin-producing business. Also, the rise of corporate healthcare provider networks and health systems, together with rising healthcare costs and competition among providers, has become prevalent in the healthcare industry. Strict payor control of reimbursement rates, consistent decreases in physician professional component fee reimbursement yield, reduced hospital inpatient use, and higher costs of capital have all contributed to the trend of physician investment in outpatient (and inpatient) specialty provider enterprises, which often compete with general acute care community hospital providers.

Joint Ventures between Hospitals and Physicians

The move toward specialized inpatient and outpatient facilities, often owned by physicians, was a consequence of significant reimbursement, regulatory, and technological changes. This represents competitive and innovative potential, allowing more cost-effective provision of healthcare services while maintaining and improving quality and target outcomes. In an attempt to strengthen relationships and align economic incentives to enhance market position and financial success between physicians and hospitals, many specialty providers, such as orthopedic surgeons, are entering into joint ventures with one another.[136] As competition for ASTC revenue streams between physicians and hospitals remains intense, new forms of joint ventures and revenue sharing options are developing in an attempt to repair this recently contemptuous relationship and to offer patients increased quality of services and access.[137] The economic benefits of a physician and hospital joint venture relationship are significant. Collaboration between physicians and hospitals may create economies of scale that would not be possible if each organization continued to operate independently.[138] Some hospital executives believe joint ventures with physicians may also lead to increases in the quality of service, leading to increased profit for the hospital.[139]

Hospital Acquisition of Physician Practices

Hospitals recently have returned to the direct employment of physicians and are increasingly competing in the labor market for physician time and loyalty.[140] Indeed, in 2011, over 80% of physician employment agreements were between physicians and hospitals (as opposed to

136 "Financing the Future II: Report 4: Joint Ventures with Physicians and Other Partners" Healthcare Financial Management Association: Westchester, IL, February 2006. p. 3.

137 "A Widening Rift in Access and Quality: Growing Evidence of Economic Disparities" By Robert E. Hurley et al., Health Affairs (December 6, 2005), http://content.healthaffairs.org/cgi/reprint/hlthaff.w5.566v1 (Accessed 04/28/10), p. W5-567.

138 "Financing the Future II: Report 4: Joint Ventures with Physicians and Other Partners" Healthcare Financial Management Association: Westchester, IL, February 2006. p. 4.

139 "Can Patient Care and Joint Ventures Coexist?" By Ron DiGiamo, Hematology and Oncology News, May 2009, http://nnecos.files.stateaffiliates.mystreet smart.com/JV%20Article%20DiGiaimo.pdf (Accessed 10/13/09), p. 39.

140 "Interview: Competition to employ physicians heats up" By Karen Cheung-Larivee, FierceHealthcare, February 9, 2012, http://www.fiercehealthcare.com/story/interview-competition-employ-physicians-heats/2012-02-09 (Accessed 4/8/15).

physician practices), and 88% of physicians placed with an employer were offered signing bonuses.[141] Hospitals had focused on recruiting primary care physicians during the 1990s, but more recently their attention has turned to specialty practitioners, resulting in a growing number of specialists also being employed by hospitals.[142]

Supply of Physician Manpower

In a recent report published by the Association of American Medical Colleges (AAMC), IHS Inc. found that by 2025, the United States would have a shortage of physician services, with demand exceeding supply by 46,100 to 90,400 physicians.[143] Major contributors to the shortage projected in the IHS report include: (1) a reduction in the hours worked by younger doctors, compared to older generations of doctors; (2) workforce attrition due to older physicians entering retirement; (3) an increase in the share of the population over the age of 65, which traditionally consumes a disproportionately large amount of healthcare services; and (4) the implementation of the ACA, which will extend health insurance to millions of individuals, likely increasing their utilization of healthcare services.[144]

Another contributor to the projected shortage of physicians is a lack of new entrants into the field. The IHS report assumed that students completing GME programs would remain stable, around 29,000 per year.[145] However, changes in the number of students completing GME programs may have a negligible impact on the number of new entrants into the profession due to the fact that the number of GME graduates applying for residencies far outweighs the number of available residency position. Indeed, early estimates of the 2015 residency match show that, although 96.2% of the available post-graduate year 1 (PGY-1) residency positions were filled, 49.7% of all PGY-1 applicants were matched.[146] The shortage of residency positions is similar at the PGY-2 level, where 92.2% of the available residency positions were filled by just 48.6% of the applicants.[147] The shortage of training positions is less severe for those seeking specialty training, as 74.5% of applicants were matched to fellowship positions.[148] The AAMC has called for expansion of Medicare funding for residency positions in order to supplement private funding of residency positions and ultimately increase the number of new entrants into the physician profession.[149]

It has become increasingly evident that primary care is crucial to the survival of the U.S. healthcare system. For example, a 2010 study published in Health Affairs found that "based on

141 Ibid.
142 "New Twist in Employing Physicians" By Dan Beckham, Hospital and Health Networks, July 5, 2005, http://www.hhnmag.com/hhnmag_app/jsp/article display.jsp?dcrpath=HHNMAG/PubsNewsArticle/data/050705HHN_Online_Beckham&domain=HHNMAG (Accessed 05/04/10).
143 "The Complexities of Physician Supply and Demand: Projections from 2013 to 2025" IHS Inc., Report for Association of American Medical Colleges, March 2015, https://www.aamc.org/download/426242/data/ihsreportdownload.pdf?cm_mmc=AAMC-_-ScientificAffairs-_-PDF-_-ihsreport (Accessed 3/9/15), p. v.
144 Ibid, p. 6-8, 23-24.
145 Ibid, p. 5.
146 "Advance Data Tables: 2015 Main Residency Match" National Resident Matching Program, March 20, 2015, http://www.nrmp.org/wp-content/uploads/2015/03/ADT2015_final.pdf (Accessed 4/8/15), p. 1-2.
147 Ibid.
148 "Results and Data: Specialties Matching Service, 2015 Appointment Year" National Resident Matching Program, February 2015, http://www.nrmp.org/wp-content/uploads/2015/02/Results-and-Data-SMS-2015.pdf (Accessed 4/8/15), p. 6-7.
149 "AAMC Remains Concerned About Shortage of Residency Positions Despite Successful Match Day" By Darrell G. Kirch, MD, Association of American Medical Colleges, March 21, 2014, https://www.aamc.org/newsroom/newsreleases/374000/03212014.html (Accessed 4/8/15).

the existing evidence, the determined pursuit of primary care as a health systems orientation is likely to have beneficial effects on the quality, outcomes, and cost of U.S. health care."[150] However, the traditional fee-for-service system triggered a surge in specialty medicine, which contributed, in turn, to the notion that specialists are more reputable physicians than general practitioners.[151] Substantial gaps in pay between primary care and specialty practitioners suggest to students that specialized medicine is the ideal route to take.[152] Further, students associate specialty medicine with a certain dimension of prestige and lifestyle flexibility.[153]

TECHNOLOGY

Technology has fueled the entry of new competitors in many industries, and healthcare is no exception. Patients are accessing medical advice and information through the Internet and becoming more informed about care and treatment options. Advances in medical imaging communication have made it possible for radiologists in remote locations to outsource x-ray film readings for hospitals,[154] possibly at lower prices. As available technology has broadened the scope of over-the-counter pharmaceuticals, the scope of pharmacy services has broadened as well. Healthcare professionals in retail settings have started competing with physicians and other healthcare professionals for patients seeking service or advice that relating to a variety of healthcare topics.[155] Healthcare's primary difference from other industries relative to technology, however, may be the strict regulation of medical professionals, treatments, and drugs, which has the capacity to delay or prohibit the development of substitutes, therefore, discouraging innovation—the "fundamental driver" of quality improvement and the "underlying dynamic" of a company's ability to compete.[156]

150 "Primary Care: A Critical Review of the Evidence on Quality and Costs of Health" By Mark W. Friedberg et al., Health Affairs, Vol. 29, No. 5 (May 2010), http://content.healthaffairs.org/content/29/5/766.full.pdf (Accessed 4/8/15), p. 771.

151 "Council on Graduate Medical Education: What is it? What Has it Done? Where is it Going?" Council on Graduate Medical Education, March 2000, http://www.cogme.gov/bishop_report.pdf (Accessed 04/30/10).

152 "Graduate Medical Education: Trends in Training and Student Debt" GAO-09-438R, Washington, D.C.: United States Government Accountability Office, May 4, 2009, p. 3; "The Primary Care—Specialty Income Gap: Why it Matters" By Thomas Bodenheimer, Robert A. Berenson, and Paul Rudolf, Annals of Internal Medicine, Vol. 146, No. 4 (February 20, 2007), p. 301.

153 "Graduate Medical Education: Trends in Training and Student Debt" GAO-09-438R, Washington, D.C.: United States Government Accountability Office, May 4, 2009, p. 3; "New Report Take In-Depth Look at Reasons Behind Low Level of Student Interest In Family Medicine" American Academy of Family Physicians, September 2, 2009, http://www.aafp.org/online/en/home/publications/news/news-now/resident-student-focus/20090902nrmp-report.html (Accessed 10/13/09).

154 "Outsourced radiologists perform better reading for fewer hospitals" Penn State News, March 18, 2013, http://news.psu.edu/story/143474/2013/01/04/research/outsourced-radiologists-perform-better-reading-fewer-hospitals (Accessed 4/13/15).

155 See Chapter 6: *Emerging Models*.

156 "Biomarket Trends: Pharmaceutical Industry Undergoing Transformation" By Steve Arlington and Anthony Farino, Genetic Engineering and Biotechnology News, Vol. 27, No. 15, (September 1, 2007), http://genengnews.com/gen-articles/biomarket-trends-b-pharmaceutical-industry-undergoing-b-b-b/2197/ (Accessed 05/18/10); "FDA Regulation of Molecular Diagnostics" By Ken Powell, Gehrson Lehrman Group, February 6, 2009, http://www.glgroup.com/ NewsWatchPrefs/Print.aspx?pid=29010 (Accessed 7/6/09).

PART I–PRIMARY CARE PRACTICES

PRIMARY CARE

Primary care physicians are central to a healthcare delivery system and, as indicated in *Projecting the Supply and Demand for Primary Care Practitioners Through 2020*, primary care physicians continue to be one of the most troubling physician populations in light of the looming physician shortage.[157] As illustrated in Table 7-3, five areas of primary care exist, including (1) general practice, (2) family practice, (3) internal medicine, (4) pediatrics, and (5) obstetrics and gynecology.[158]

GENERAL PRACTICE

Description and Scope

Scope

The practice of primary care includes such activities as health promotion, disease prevention, health maintenance, counseling, patient education, and diagnosis and treatment of acute and chronic illnesses in a variety of healthcare settings (for example, office, inpatient, critical care, long-term care, home care, day care, etc.). Primary care services are typically "…performed and managed by a personal physician often collaborating with other health professionals, and utilizing consultations or referrals as appropriate."[159]

General practitioners often serve as an initial source of care, which resembles the role of traditional caregivers. They provide a wide range of services to a fairly consistent patient base.[160] General practice physicians may make specialty referrals if their patients develop conditions outside their scope of practice.[161]

Education and Training

No formal general practice residency programs exist; however, a physician must meet all requirements of the state in which he or she is practicing.[162] Likewise, no general practice certification boards are recognized by ABMS or AOA.[163]

157 "Projecting the Supply and Demand for Primary Care Practitioners through 2020" Health Resources and Services Administration: Bureau of Health Professions, November 2013, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/projecting primarycare.pdf (Accessed 4/13/15), p. 1.
158 "Physician Characteristics and Distribution in the US" 2009 Edition, American Medical Association: Chicago, IL, 2009, p. xviii.
159 "Primary Care" American Academy of Family Physicians, 2006, http://www.aafp.org/online/en/home/policy/policies/p/primary care.printerview.html (Accessed 8/17/09).
160 "Occupational Employment and Wages, May 2014: 29-1062 Family and General Practitioners" Bureau of Labor Statistics, http://www.bls.gov/oes/current/oes291062.htm (Accessed 4/13/15).
161 Ibid.
162 "Physician Characteristics and Distribution in the US" 2010 Edition, American Medical Association: Chicago, IL, 2010, p. xviii; "So You Want to Be a General Practitioner (Medical Doctor)" By Anton Scheepers, The Apprentice Doctor, March 28, 2008, http:/www.theapprencticedoctor.com/ showadvice/php?article_id=25 (Accessed 8/24/09).

Specialties

Physicians in primary care fall into two categories: (1) practitioners in general primary care specialties and (2) practitioners in primary care subspecialties. In addition to the general practice of primary care, there are four primary care specialties: family practice, internal medicine, obstetrics and gynecology, and pediatrics (see Table 7-3).[164] Subspecialties, as they relate to a physician's options, are discussed in *Family Medicine, Internal Medicine, Pediatrics*, and *Obstetrics and Gynecology* sections, below. Each of the primary care specialties, with the exception of general practice, is represented by an ABMS-approved medical specialty board.

FAMILY MEDICINE

Description and Scope

Scope

A family practitioner possesses medical knowledge that allows them to provide a broad range of services to male and female patients of all ages. The role of family practitioner is steeped in tradition and involves focusing on the community-based family unit.[165]

Family practice may involve a variety of procedures including, but not limited to, providing assistance during major surgeries and performing cesarean sections, vasectomies, flexible sigmoidoscopy, colposcopy, skin biopsy and lesion removal, cryotherapy of skin lesions and the cervix, cervical biopsy, endometrial biopsy, spirometry, exercise treadmill testing, splinting and casting, obstetric ultrasound, and endoscopy of the nasopharynx, larynx, and gastrointestinal tract. Moreover, it is expected that family medicine physicians may play a large part in meeting an increased demand for emergency care services.[166]

Education and Training

Residency programs in family medicine are three years in length and focus on continuity, coordination, and leadership of comprehensive care.[167] Training emphasizes competence in evaluation, diagnostics, and general medical knowledge in the family medicine field, as well as

163 "Specialty and Subspecialty Certificates" American Board of Medical Specialties, http://www.abms.org/member-boards/specialty-subspecialty-certificates/ (Accessed 4/13/15); "Specialties & Subspecialties" American Osteopathic Association, https://www.osteopathic.org/inside-aoa/development/aoa-board-certification/Pages/specialty-subspecialty-certification.aspx (Accessed 4/13/15).

164 "Physician Characteristics and Distribution in the US" 2009 Edition, American Medical Association: Chicago, IL, 2009, p. xviii.

165 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 19.

166 "The Role of Family Physicians in Delivering Emergency Medical Care" By Kim A. Bullock, American Family Physician, Vol. 77, No. 2 (January 15, 2008), http://www.aafp.org/afp/2008/0115/p148.html (Accessed 05/14/10), p. 148; "Critical Challenges for Family medicine: Delivering Emergency Medical Care – 'Equipping Family Physicians for the 21st Century (Position Paper)" American Academy of Family Physicians, 2004, http://www.aafp.org/about/policies/all/critical-challenges.html (Accessed 4/13/15); "Family Medicine Updates: Family Physicians in Emergency Medicine: New Opportunities and Critical Challenges" By W. Anthony Gerard et al., 2010, Annals of Family Medicine, Vol. 8, No. 6 (November/December 2010) http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2975696/pdf/0080564.pdf (Accessed 4/13/15), p. 564-65.

167 "ACGME Program Requirements for Graduate Medical Education in Family Medicine" Accreditation Council for Graduate Medical Education, September 29, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/120_family_medicine_07012014.pdf (Accessed 4/9/15), p. 1.

training in maternity care.[168] Advanced training fellowship programs for subspecialties in family medicine are available.[169] For more information on fellowship programs visit the American Board of Family Medicine's ABFM's website.[170] The ABFP certifies family practitioners who have completed the family practice residency requirements from a residency accredited by the ACGME.[171]

Specialties

Certified subspecialties of family medicine include adolescent medicine, geriatric medicine, hospice and palliative medicine, sleep medicine, and family sports medicine.[172] See Table 7-4 for more information about each of these specialty areas.

168 Ibid, p. 11-13.
169 "About Physician Specialties: Family Medicine" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/ Consumers/ About_Physician_Specialties/family.aspx (Accessed 01/14/09).
170 Ibid.
171 "Certification Policies" American Board of Family Medicine, 2009, https://www.theabfm.org/cert/certificationpolicies.aspx (Accessed 02/05/10).
172 "American Board of Family Medicine" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/family-medicine.aspx (Accessed 4/13/15).

Table 7-4: Family Medicine Subspecialty Certification Offered by the ABFM

Specialty	Subspecialties (3)	Description (2)	Educational Requirements		Total Physicians (1)	Patient Care (1)		Mean Age of Physicians (1)	Representative Current Procedural Terminology Codes (4)
						Office-Based	Hospital-Based		
Family Medicine	Adolescent Medicine	"multidisciplinary health care specialist trained in the unique physical, psychological, and social characteristics of adolescents and their health care problems and needs."	ABFM primary certification, plus licensure, plus 2 years fellowship in adolescent medicine	(5)	8	8	0	61.6	99213; 99214; G8553; 99232; G0008; 96372; 85610; G8427; 85025; G9151
	Geriatric Medicine	"special knowledge of the aging process and special skills in the diagnostic, therapeutic, preventive, and rehabilitative aspects of illness in the elderly"	ABFM primary certification, plus licensure, plus fellowship in geriatric medicine	(6)	800	625	120	46.8	99214; 99309; 99308; 99213; 99232; G8553; 99233; 99306; 99215; 99307
	Hospice and Palliative Medicine	"special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses"	ABFM primary certification, plus licensure, plus 1-year fellowship in hospice and palliative medicine	(7)	26	13	2	54.8	99233; 99232; 99223; 99231; 99222; 99214; 99356; 99213; 99309; 99221
	Sleep Medicine	"demonstrated expertise in the diagnosis and management of clinical conditions that occur during sleep, that disturb sleep, or that are affected by disturbances in the wake-sleep cycle"	ABFM primary certification, plus licensure, plus 1-year fellowship in sleep medicine	(8)	N/A	N/A	N/A	N/A	99213; 99214; G8553; 99232; G0008; 96372; 85610; G8427; 85025; G9151
	Sports Medicine	"preventing, diagnosing and treating injuries related to participating in sports and/or exercise"	ABFM primary certification, plus licensure, plus a 1-year fellowship in sports medicine	(9)	1,191	988	194	39.2	J7325; J3301; 20610; 99213; 99214; 99203; J0702; J1100; 73030; 99212

Notes:

1 "Physician Characteristics and Distribution in the US: 2015 Edition," By Derek Smart, Chicago, IL: American Medical Association, 2015, p. 15-24.
2 "American Board of Family Medicine," American Board of Medical Specialties, 2015. http://www.abms.org/memberboards/contactanabmsmemberboard/americanboardoffamily medicine/(Accessed 4/10/2015).
3 "Certificates of Added Qualifications," American Board of Family Medicine, 2015, https://www.theabfm.org/caq/index.aspx (Accessed 4/10/2015).
4 "Top 10 procedure codes by frequency for all specialties - 2014," The Frank Cohen Group, 2014.
5 "Adolescent Medicine," American Board of Family Medicine, 2015, https://www.theabfm.org/caq/adolescent.aspx (Accessed 4/9/2015).
6 "Geriatric Medicine," American Board of Family Medicine, 2015, https://www.theabfm.org/caq/geriatric.aspx (Accessed 4/9/2015).
7 "Hospice and Palliative Medicine," American Board of Family Medicine, 2015, https://www.theabfm.org/caq/hospice.aspx (Accessed 4/9/2015).
8 "Sleep Medicine," American Board of Family Medicine, 2015, https://www.theabfm.org/caq/sleep.aspx (Accessed 4/9/2015).
9 "Sports Medicine," American Board of Family Medicine, 2015, https://www.theabfm.org/caq/sports.aspx (Accessed 4/9/2015).

INTERNAL MEDICINE

Description and Scope

Scope

Internists represent a diverse range of physicians, with some serving as primary caregivers, much like general or family practitioners, and others providing highly specialized services to referred patients. Most internists function as a combination of the two. In general, internists "diagnose and provide non-surgical treatment of diseases and injuries of internal organ systems."[173]

Practitioners in internal medicine must be trained in a broad range of medical specialty areas (for example, dermatology, ophthalmology, allergy, clinical pharmacology, critical care medicine, geriatrics, nutrition, psychiatry, pediatrics, emergency care, and so forth). Additionally, they must master a variety of skills in diagnostic testing, critical review of medical literature, epidemiology, and cost-efficiency.[174]

Education and Training

Graduates seeking certification as internists must complete residency training in internal medicine. Residents in these programs study health promotion, disease prevention, diagnosis, and treatment for a wide variety of patients and illnesses.[175] These residency programs are three years in length and train residents to manage patients in multiple roles and settings throughout the health system.[176] The American Board of Internal Medicine (ABIM) offers a great number of subspecialties, many of which require completion of initial board certification as an internist before advanced training is begun.[177]

Specialties

Subspecialties in internal medicine include adolescent medicine; adult congenital heart disease; advanced heart failure and transplant cardiology; cardiovascular disease; clinical cardiac electrophysiology; critical care medicine; endocrinology, diabetes, and metabolism; gastroenterology; geriatric medicine; hematology; hospice and palliative medicine; infectious disease; interventional cardiology; medical oncology; nephrology; pulmonary disease; rheumatology; sleep medicine; sports medicine; and transplant hepatology.[178] See Table 7-5 for more information related to these subspecialty areas.

173 "Occupational Employment and Wages, May 2014: 29-1063 Internists, General" Bureau of Labor Statistics, http://www.bls.gov/oes/current/oes291063.htm (Accessed 4/13/15).
174 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 23.
175 "ACGME Program Requirements for Graduate Medical Education in Internal Medicine" Accreditation Council for Graduate Medical Education, September 16, 2008, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/140_internal_medicine_07012013.pdf (Accessed 4/9/15), p. 1.
176 Ibid, p. 2, 17-18.
177 "American Board of Internal Medicine" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-internal-medicine/ (Accessed 4/9/15).
178 Ibid.

Table 7-5: Internal Medicine Subspecialty Certification offered by ABIM

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Adolescent Medicine	An Internist who specializes in Adolescent Medicine is a multidisciplinary health care specialist trained in the unique physical, psychological, and social characteristics of adolescents and their health care problems and needs.	ABIM certification in internal medicine or a subspecialty, complete fellowship training in adolescent medicine (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam	(4)	20	14	3	55.3	99214, 99213, 99232, 99233, G8553, J0878, 99223, J0897, 99308, G0008
	Adult Congenital Heart Disease	An Internist or Pediatrician who specializes in Adult Congenital Heart Disease has the unique knowledge, skills and practice required of a cardiologist for evaluating and delivering high quality lifelong care for a wide range of adult patients with congenital heart disease.	ABIM certification in cardiovascular disease or American Board of Pediatrics (ABP) certification in pediatric cardiology, complete fellowship training in adult congenital heart disease (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam. If certified in cardiovascular disease prior to July 1, 2016, or certified in pediatric cardiology prior to July 1, 2012, meeting certain practice thresholds may substitute for fellowship training (see www.abim.org for details).	(5)	1	0	1	39.0	99214, 99213, 99232, 99233, G8553, J0878, 99223, J0897, 99308, G0008

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Advanced Heart Failure and Transplant Cardiology	An internist who specializes in Heart Failure and Transplant Cardiology has the special knowledge and skills required of cardiologists for evaluating and optimally managing patients with heart failure, particularly those with advanced heart failure, those with devices, including ventricular assist devices, and those who have undergone or are awaiting transplantation.	ABIM certification in cardiovascular disease, complete fellowship training in advanced heart failure and transplant cardiology (minimum 12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(6)	71	14	56	36.1	99214, 99213, 99232, 99233, G8553, J0878, 99223, J0897, 99308, G0008
	Cardiovascular Disease	An Internist who specializes in diseases of the heart and blood vessels and manages complex cardiac conditions, such as heart attacks and life-threatening, abnormal heartbeat rhythms.	ABIM certification in internal medicine, complete fellowship training in cardiovascular disease (minimum 36 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(7)	23,575	17,657	4,678	52.7	93010, 99214, 93000, 93306, 99213, Q9967, 99232, 85610, J2785, G8553

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Clinical Cardiac Electrophysiology	A field of special interest within the subspecialty of cardiovascular disease, which involves intricate technical procedures to evaluate heart rhythms and determine appropriate treatment.	ABIM certification in cardiovascular disease, complete fellowship training in clinical cardiac electrophysiology (12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam. Additionally, every year after completion of training, commitment of at least 50% of professional time and effort to clinical cardiac electrophysiology in a variety of clinical settings.	(8)	1,807	1,421	353	44.3	93010, 93000, 99214, 93280, 93296, 99213, 99232, 93295, 93294, 93293
	Critical Care Medicine	An Internist trained in Critical Care Medicine has expertise in the diagnosis, treatment and support of critically ill and injured patients, particularly trauma victims and patients with multiple organ dysfunctions. This physician also coordinates patient care among the primary physician, critical care staff, and other specialists.	ABIM certification in internal medicine, complete fellowship training (two to three years, see below), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam. Fellowship training in critical care medicine is completed by either: (1) two years of fellowship training in a subspecialty of internal medicine, followed by one year of fellowship training in critical care medicine; (2) two years of fellowship training in critical care medicine); or (3) two years of fellowship training in advanced general internal medicine, followed by one year of fellowship training in critical care medicine.	(9)	1,785	1,129	539	48.4	99291, 99233, 99232, 99214, 99213, 99223, 99292, 94729, J2357, G8553

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Endocrinology, Diabetes, and Metabolism	An Internist who concentrates on disorders of the internal (endocrine) glands such as the thyroid and adrenal glands. This specialist also deals with disorders such as diabetes, metabolic and nutritional disorders, obesity, pituitary diseases, and menstrual and sexual problems.	ABIM certification in internal medicine, complete fellowship training in endocrinology, diabetes, and metabolism (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(10)	6,498	4,567	1,144	49.7	99214, J0897, 99213, 83036, G8553, 99232, 82962, 84443, 80061, 80053
	Gastroenterology	An Internist (Gastroenterologist) who specializes in diagnosis and treatment of diseases of the digestive organs including the stomach, bowels, liver, and gallbladder. This specialist treats conditions such as abdominal pain, ulcers, diarrhea, cancer, and jaundice, and performs complex diagnostic and therapeutic procedures using endoscopes to visualize internal organs.	ABIM certification in internal medicine, complete fellowship training in gastroenterology (minimum 36 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(11)	14,366	11,322	2,413	50.6	99213, 99214, 99232, 43239, J1745, 45380, G8553, G8427, 45385, Q9967

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Geriatric Medicine	An Internist who has special knowledge of the aging process and special skills in the diagnostic, therapeutic, preventive, and rehabilitative aspects of illness in the elderly. This specialist cares for geriatric patients in the patient's home, the office, long-term care settings such as nursing homes, and the hospital.	ABIM certification in internal medicine, complete fellowship training in geriatric medicine (minimum 12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(12)	3,848	2,695	822	47.8	99214, 99309, 99308, 99213, 99232, G8553, 99233, 99306, 99215, 99307
	Hematology	An Internist (Hematologist) with additional training who specializes in diseases of the blood, spleen, and lymph. This specialist treats conditions such as anemia, clotting disorders, sickle cell disease, hemophilia, leukemia, and lymphoma.	ABIM certification in internal medicine, complete fellowship training in hematology (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(13)	1,897	1,140	322	59.0	J0881, J9025, Q0138, J9263, J0885, J0641, J1453, J1756, J1100, J0897
	Hospice and Palliative Medicine	An Internist with special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family.	ABIM certification in internal medicine, complete fellowship training in hospice and palliative medicine (minimum 12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(14)	44	21	10	56.3	99233, 99232, 99223, 99231, 99222, 99214, 99356, 99213, 99309, 99221

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Infectious Disease	An Internist who deals with infectious diseases of all types and in all organ systems. Conditions requiring selective use of antibiotics call for this special skill. This physician often diagnoses and treats AIDS patients and patients with fevers which have not been explained. Infectious disease specialists may also have expertise in preventive medicine and travel medicine.	ABIM certification in internal medicine, complete fellowship training in infectious disease (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(15)	8,165	5,016	1,804	48.9	J0878, 99232, 99233, J1642, J0696, 99223, 99231, 99222, 99214, J2323
	Interventional Cardiology	An area of medicine within the subspecialty of Cardiology, which uses specialized imaging and other diagnostic techniques to evaluate blood flow and pressure in the coronary arteries and chambers of the heart, and uses technical procedures and medications to treat abnormalities that impair the function of the cardiovascular system.	ABIM certification in cardiovascular disease, complete fellowship training in interventional cardiology (minimum 12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(16)	2,757	2,236	493	42.6	99214, 99213, 99232, 99233, G8553, J0878, 99223, J0897, 99308, G0008

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Medical Oncology	An Internist (Medical Oncologist) who specializes in the diagnosis and treatment of all types of cancer and other benign and malignant tumors. This specialist decides on and administers therapy for these malignancies, as well as consults with surgeons and radiotherapists on other treatments for cancer.	ABIM certification in internal medicine, complete fellowship training in medical oncology (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(17)	4,896	3,384	798	57.5	J0881, J0641, J9263, Q0138, J9025, J1453, J0885, J0897, J1756, J9264
	Nephrology	An Internist (Nephrologist) who treats disorders of the kidney, high blood pressure, fluid and mineral balance, and dialysis of body wastes when the kidneys do not function. This specialist consults with surgeons about kidney transplantation.	ABIM certification in internal medicine, complete fellowship training in nephrology (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(18)	9,651	7,373	1,634	48.3	J1756, J0881, Q0138, 99232, Q9967, J0885, 90960, 99214, 99233, 90970
	Pulmonary Disease	An Internist (Pulmonologist) who treats diseases of the lungs and airways. The specialist diagnoses and treats cancer, pneumonia, pleurisy, asthma, occupational and environmental diseases, bronchitis, sleep disorders, emphysema, and other complex disorders of the lungs.	ABIM certification in internal medicine, complete fellowship training in pulmonary disease (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(19)	5,618	4,177	792	59.2	99232, 99233, 99214, 99213, 99291, J2357, 94729, 94060, G8553, 99223

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Rheumatology	An Internist (Rheumatologist) who treats diseases of joints, muscle, bones, and tendons. This specialist diagnoses and treats arthritis, back pain, muscle strains, common athletic injuries, and collagen diseases.	ABIM certification in internal medicine, complete fellowship training in rheumatology (minimum 24 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(20)	5,341	4,020	843	51.0	J3262, J0718, J1745, J0129, J0897, 99214, 99213, J3301, J7325, 20610
	Sleep Medicine	An Internist with demonstrated expertise in the diagnosis and management of clinical conditions that occur during sleep, that disturb sleep, or that are affected by disturbances in the wake-sleep cycle. This specialist is skilled in the analysis and interpretation of comprehensive polysomnography, and well versed in emerging research and management of a sleep laboratory.	ABIM certification in internal medicine or a subspecialty, complete fellowship training in sleep medicine (minimum 12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(21)	37	28	5	58.1	99214, 99213, 99232, 99233, G8553, J0878, 99223, J0897, 99308, G0008

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Internal Medicine	Sports Medicine	An Internist who specializes in preventing, diagnosing, and treating injuries related to participating in sports and/or exercise. In addition to the study of those fields that focus on prevention, diagnosis, treatment, and management of injuries, sports medicine also deals with illnesses and diseases that might have effects on health and physical performance.	ABIM certification in internal medicine or a subspecialty, complete fellowship training in sports medicine (minimum 12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(22)	55.0	49.0	4.0	N/A	J7325, J3301, 20610, 99213, 99214, 99203, J0702, J1100, 73030, 99212
	Transplant Hepatology	An Internist with special knowledge and the skill required of a Gastroenterologist to care for patients prior to and following hepatic transplantation that spans all phases of liver transplantation. Selection of appropriate recipients requires assessment by a team having experience in evaluating the severity and prognosis of patients with liver disease.	ABIM certification in gastroenterology, complete fellowship training in transplant hepatology (minimum 12 months), demonstrate clinical competence, hold a valid license to practice medicine, and pass a certification exam.	(23)	114	62	40	37.2	99214, 99213, 99232, 99233, G8553, J0878, 99223, J0897, 99308, G0008

Notes:

1 "American Board of Internal Medicine" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-internal-medicine/ (Accessed 4/10/2015).
2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.
3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).
4 "Adolescent Medicine Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/adol.aspx (Accessed 4/9/2015).
5 "Adult Congenital Heart Disease Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/internal medicinesubspecialtypolicies/adultcongenitalheartdisease.aspx (Accessed 4/9/2015).
6 "Advanced Heart Failure and Transplant Cardiology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/ahftc.aspx (Accessed 4/9/2015).
7 "Cardiovascular Disease Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/card.aspx# requirements (Accessed 4/9/2015).
8 "Clinical Cardiac Electrophysiology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/ccep.aspx (Accessed 4/9/2015).
9 "Critical Care Medicine Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/ccm.aspx (Accessed 4/9/2015).
10 "Endocrinology, Diabetes, & Metabolism Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/endo.aspx (Accessed 4/9/2015).
11 "Gastroenterology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/gastro.aspx (Accessed 4/9/2015).
12 "Geriatric Medicine Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/geri.aspx (Accessed 4/9/2015).
13 "Hematology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/hema.aspx (Accessed 4/9/2015).
14 "Hospice & Palliative Medicine Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/hospice.aspx (Accessed 4/9/2015).
15 "Infectious Disease Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/id.aspx (Accessed 4/9/2015).
16 "Interventional Cardiology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/icard.aspx (Accessed 4/9/2015).
17 "Medical Oncology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/medon.aspx (Accessed 4/9/2015).
18 "Nephrology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/neph.aspx (Accessed 4/9/2015).
19 "Pulmonary Disease Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/pulm.aspx (Accessed 4/9/2015).
20 "Rheumatology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/rheu.aspx (Accessed 4/9/2015).
21 "Sleep Medicine Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/sleep.aspx (Accessed 4/9/2015).
22 "Sports Medicine Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/sports.aspx (Accessed 4/9/2015).
23 "Transplant Hepatology Policies" American Board of Internal Medicine, http://www.abim.org/certification/policies/imss/thep.aspx (Accessed 4/9/2015).

PEDIATRICS

Description and Scope

Scope

Pediatricians provide primary care services to infants, children, teenagers, and young adults, tracking their growth to adulthood.[179] General pediatricians diagnose and treat infections, injuries, genetic defects, malignancies, and many types of systemic disease and dysfunction. They work to reduce infant and child mortality, control infectious disease, foster healthy lifestyles, and ease the day-to-day difficulties of children and adolescents with chronic

179 "Occupational Employment and Wages, May 2014: 29-1065 Pediatricians, General" Bureau of Labor Statistics, http://www.bls.gov/oes/current/oes291065.htm (Accessed 4/13/15).

conditions. Additionally, pediatricians have been increasingly involved in the prevention, early detection, and management of behavioral, developmental, and functional social problems that affect children and adolescents.[180]

General pediatricians must work with pediatric subspecialists and pediatric surgery specialists, as well as physical therapists, nutritionists, psychologists, social workers, and teachers to provide for the health and emotional needs of children.[181]

Education and Training

Pediatric medicine residency programs are three years in length and focus on the skills needed to promote physical and mental health, as well as provide disease prevention, diagnosis, and treatment in children from infancy through young adulthood.[182] Training as a pediatrician is governed by the American Board of Pediatrics (ABP).[183] Pediatrics residency programs require residents to demonstrate competence in a variety of skills, including taking patient histories, developing and executing care management plans, and performing procedures that are used by pediatricians in general practice.[184] Once a physician has completed residency training in pediatrics, the ABP offers a number of sub-specialties that focus on specific areas within pediatrics.[185]

Specialties

The ABMS recognizes the following pediatric subspecialties: adolescent medicine, child abuse pediatrics, developmental-behavioral pediatrics, hospice and palliative medicine, medical toxicology, neonatal-perinatal medicine, neurodevelopmental disabilities, pediatric cardiology, pediatric critical care medicine, pediatric emergency medicine, pediatric endocrinology, pediatric gastroenterology, pediatric hematology-oncology, pediatric infectious disease, pediatric nephrology, pediatric pulmonology, pediatric rheumatology, pediatric transplant hepatology, sleep medicine, and sports medicine.[186] See Table 7-6 for details about these pediatric subspecialties.

180 "The Official ABMS Directory of Board Certified Medical Specialists" American Board of Medical Specialties, 26th Edition, Vol. 3, New Providence, NJ: Marquis Who's Who, 1994, p. xxiii-xxv.

181 "Case Based Pediatrics for Medical Students and Residents" By Melinda J. Ashton, Honolulu, HI: Department of Pediatrics of the University of Hawaii John A. Burns School of Medicine, May 2002, http://www.hawaii.edu/medicine/pediatrics/pedtext/s01c01.html (Accessed 10/15/09).

182 "ACGME Program Requirements for Graduate Medical Education in Pediatrics" Accreditation Council for Graduate Medical Education, September 30, 2012, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/320_pediatrics_07012013.pdf (Accessed 4/9/15), p. 2.

183 "American Board of Pediatrics" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-pediatrics/ (Accessed 4/9/15).

184 "ACGME Program Requirements for Graduate Medical Education in Pediatrics" Accreditation Council for Graduate Medical Education, September 30, 2012, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/320_pediatrics_07012013.pdf (Accessed 4/9/15), p. 11-12.

185 "American Board of Pediatrics" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-pediatrics/ (Accessed 4/9/15).

186 "American Board of Pediatrics" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/pediatrics.aspx (Accessed 4/13/15).

Table 7-6: Pediatric Medicine Subspecialty Certifications offered by the ABP

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Adolescent Medicine	A Pediatrician who specializes in Adolescent Medicine is a multidisciplinary health care specialist trained in the unique physical, psychological, and social characteristics of adolescents and their health care problems and needs.	Certification in either pediatrics, internal medicine, or family practice, valid licensure, and three years of fellowship training.	(4)	554	308	155	49.4	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393
	Child Abuse Pediatrics	A Pediatrician who specializes in Child Abuse Pediatrics serves as a resource to children, families, and communities by accurately diagnosing abuse; consulting with community agencies on child safety; providing expertise in courts of law; treating consequences of abuse and neglect; directing child abuse and neglect prevention programs; and participating on multidisciplinary teams investigating and managing child abuse cases.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(5)	58	14	38	39.5	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Developmental-Behavioral Pediatrics	A Pediatrician who specializes in Developmental-Behavioral Pediatrics possesses special skills, training, and experience to foster understanding and promotion of optimal development of children and families through research, education, clinical care, and advocacy efforts. This physician assists in the prevention, diagnosis, and management of developmental difficulties and problematic behaviors in children and in the family dysfunctions that compromise children's development.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(6)	293	152	125	42.1	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393
	Hospice and Palliative Medicine	A Pediatrician who specializes in Hospice and Palliative Medicine has special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family.	Certification in pediatrics or a pediatric subspecialty, valid licensure, and one year of fellowship training.	(7)	3	-	3	53.0	99233, 99232, 99223, 99231, 99222, 99214, 99356, 99213, 99309, 99221

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Medical Toxicology	Medical Toxicologists are physicians who specialize in the prevention, evaluation, treatment, and monitoring of injury and illness from exposures to drugs and chemicals, as well as biological and radiological agents. These specialists care for people in clinical, academic, governmental, and public health settings, as well as provide poison control center leadership. Important areas of Medical Toxicology include acute drug poisoning; adverse drug events; drug abuse, addiction, and withdrawal; chemicals and hazardous materials; terrorism preparedness; venomous bites and stings; and environmental and workplace exposures.	Certification in pediatrics, valid licensure, and two years of fellowship training.	(8)	2	1	1	66.0	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393
	Neonatal-Perinatal Medicine	A Pediatrician specializing in Neonatal-Perinatal Medicine acts as the principal care provider for sick newborn infants. This specialist's clinical expertise is used for direct patient care and for consulting with obstetrical colleagues to plan for the care of mothers who have high-risk pregnancies.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(9)	5,132	3,051	1,639	49.7	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Neuro-developmental Diseases	A Pediatrician or Child Neurologist who specializes in Neurodevelopmental Disabilities focuses on the evaluation and treatment of chronic conditions that affect the developing and mature nervous system such as cerebral palsy, mental retardation, and chronic behavioral syndromes or neurologic conditions.	Valid licensure, two years of training in general pediatrics, and four years of combined training in neurology and neurodevelopmental disabilities.	(10)	26	19	4	57.5	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393
	Pediatric Cardiology	A Pediatric Cardiologist provides comprehensive care to patients with cardiovascular problems. This specialist is skilled in selecting, performing, and evaluating the structural and functional assessment of the heart and blood vessels, and the clinical evaluation of cardiovascular disease.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(11)	2,552	1,522	861	47.0	93010, 99214, 93000, 93306, 99213, Q9967, 99232, 85610, J2785, G8553

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Pediatric Critical Care Medicine	A Pediatrician who specializes in Pediatric Critical Care Medicine is an expert in advanced life support for children from the term or near-term neonate to the adolescent. This competence extends to the critical care management of life-threatening organ system failure from any cause in both medical and surgical patients, as well as to the support of vital physiological functions. This specialist may have administrative responsibilities for intensive care units and also facilitates patient care among other specialists.	Certification in pediatrics, valid licensure, and three years of fellowship training. A candidate may receive dual certification in both pediatric critical care medicine and anesthesiology, which requires prior certification in pediatrics and five years of fellowship training.	(12)	2,002	1,081	792	43.1	99291, 99233, 99232, 99214, 99213, 99223, 99292, 94729, J2357, G8553
	Pediatric Emergency Medicine	A Pediatrician specializing in Pediatric Emergency Medicine has special qualifications to manage emergency treatments in acutely ill or injured infants and children.	Certification in pediatrics or emergency medicine, valid licensure, and three years of fellowship training.	(13)	1,336	695	579	40.5	99285, 99284, 93010, 99283, 99291, G8784, 99213, 99214, J0878, 93042

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Pediatric Endocrinology	A Pediatrician with specialization in Pediatric Endocrinology provides expert care to infants, children, and adolescents who have diseases that result from an abnormality in the endocrine glands (glands which secrete hormones). These diseases include diabetes mellitus, growth failure, unusual size for age, early or late pubertal development, birth defects, the genital region and disorders of the thyroid, and the adrenal and pituitary glands.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(14)	1,329	747	431	45.6	99214, J0897, 99213, 83036, G8553, 99232, 82962, 84443, 80061, 80053
	Pediatric Gastroenterology	A Pediatrician specializing in Pediatric Gastroenterology specializes in the diagnosis and treatment of diseases of the digestive systems of infants, children, and adolescents. The Pediatric Gastroenterologist treats conditions such as abdominal pain, ulcers, diarrhea, cancer, and jaundice, and performs complex diagnostic and therapeutic procedures using lighted scopes to see internal organs.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(15)	1,185	686	416	43.0	99213, 99214, 99232, 43239, J1745, 45380, G8553, G8427, 45385, Q9967

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Pediatric Hematology-Oncology	A Pediatrician who specializes in Pediatric Hematology-Oncology is trained in the combination of pediatrics, hematology, and oncology to recognize and manage pediatric blood disorders and cancerous diseases.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(16)	2,489	1,256	896	45.8	J0881, Q0138, J9263, J0641, J9025, J0885, J1756, J1453, J0897, J1100
	Pediatric Infectious Diseases	A Pediatrician who specializes in Pediatric Infectious Diseases cares for children through the diagnosis, treatment, and prevention of infectious diseases. This specialist can apply specific knowledge to affect a better outcome for pediatric infections with complicated courses, underlying diseases that predispose to unusual or severe infections, unclear diagnoses, uncommon diseases, and complex or investigational treatments.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(17)	738	389	245	41.8	J0878, 99232, 99233, J1642, J0696, 99223, 99231, 99222, 99214, J2323
	Pediatric Nephrology	A Pediatrician with special expertise in Pediatric Nephrology deals with the normal and abnormal development and maturation of the kidney and urinary tract, the mechanisms by which the kidney can be damaged, the evaluation and treatment of renal diseases, fluid and electrolyte abnormalities, hypertension, and renal replacement therapy.	Certification in pediatrics, valid licensure, and three years of fellowship training.	(18)	724	398	223	47.3	J1756, J0881, Q0138, 99232, Q9967, J0885, 90960, 99214, 99233, 90970

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Pediatric Pulmonology	A Pediatrician specializing in Pediatric Pulmonology is dedicated to the prevention and treatment of all respiratory diseases affecting infants, children, and young adults. This specialist is knowledgeable about the growth and development of the lung, assessment of respiratory function in infants and children, and experienced in a variety of invasive and noninvasive diagnostic techniques.	Certification in pediatrics, valid licensure, and three years of fellowship training. A candidate may receive dual certification in both pediatric pulmonology and allergy/immunology, which requires prior certification in pediatrics and four years of fellowship training.	(19)	910	558	284	46.4	99232, 99233, 99214, 99213, 99291, J2357, 94729, 94060, G8553, 99223
	Pediatric Rheumatology	A Pediatrician who specializes in Pediatric Rheumatology treats diseases of joints, muscle, bones, and tendons. A Pediatric Rheumatologist diagnoses and treats arthritis, back pain, muscle strains, common athletic injuries, and collagen diseases.	Certification in pediatrics, valid licensure, and three years of fellowship training. A candidate may receive dual certification in both pediatric rheumatology and allergy/immunology, which requires prior certification in pediatrics and four years of fellowship training.	(20)	272	144	94	41.0	J3262, J0718, J1745, J0129, J0897, 99214, 99213, J3301, J7325, 20610

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Pediatric Transplant Hepatology	The Pediatrician who specializes in Transplant Hepatology possesses the special knowledge, skill, and expertise required of Pediatric Gastroenterologists to care for patients prior to and following hepatic transplantation. Selection of appropriate recipients requires assessment by a team having experience in evaluating the severity and prognosis of patients with liver disease.	Certification in pediatric gastroenterology, valid licensure, and one year of fellowship training.	(21)	11	4	6	34.8	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393
	Sleep Medicine	A Pediatrician with demonstrated expertise in the diagnosis and management of clinical conditions that occur during sleep, that disturb sleep, or that are affected by disturbances in the wake-sleep cycle. This specialist is skilled in the analysis and interpretation of comprehensive polysomnography, and well versed in emerging research and management of a sleep laboratory.	Certification in pediatrics or a pediatric subspecialty, valid licensure, and one year of fellowship training.	(22)	4.0	2.0	1.0	47.0	99213, 90460, 99214, 90461, 90471, 90472, 87880, 99392, 99391, 99393

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Pediatrics	Sports Medicine	A Pediatrician who specializes in preventing, diagnosing, and treating injuries related to participating in sports and/or exercise. In addition to the study of those fields that focus on prevention, diagnosis, treatment, and management of injuries, sports medicine also deals with illnesses and diseases that might have effects on health and physical performance.	Certification in pediatrics, valid licensure, and one year of fellowship training.	(23)	107	75	28	38.5	J7325, J3301, 20610, 99213, 99214, 99203, J0702, J1100, 73030, 99212

Notes:

1 "American Board of Pediatrics" American Board of Medical Specialties, http://www.abms.org/memberboards/contactanabmsmemberboard/americanboardofpediatrics/ (Accessed 4/10/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Adolescent Medicine Certification" American Board of Pediatrics, https://www.abp.org/content/adolescent-medicine-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

5 "Child Abuse Pediatrics Certification" American Board of Pediatrics, https://www.abp.org/content/child-abuse-pediatrics-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

6 "Developmental-Behavioral Certification" American Board of Pediatrics, https://www.abp.org/content/developmental-behavioral-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

7 "Hospice and Palliative Medicine Certification" American Board of Pediatrics, https://www.abp.org/content/hospice-and-palliative-medicine-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

8 "Medical Toxicology Certification" American Board of Pediatrics, https://www.abp.org/content/medical-toxicology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

9 "Neonatal-Perinatal Medicine Certification" American Board of Pediatrics, https://www.abp.org/content/neonatal-perinatal-medicine-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

10 "Pediatrics-Neurodevelopmental Disabilities Pathway" American Board of Pediatrics, https://www.abp.org/content/pediatrics-neurodevelopmental-disabilities-pathway (Accessed 4/10/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

11 "Pediatric Cardiology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-cardiology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

12 "Pediatric Critical Care Medicine Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-critical-care-medicine-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

13 "Pediatric Emergency Medicine Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-emergency-medicine-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

14 "Pediatric Endocrinology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-endocrinology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

15 "Pediatric Gastroenterology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-gastroenterology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

16 "Pediatric HematologyOncology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-hematology-oncology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

17 "Pediatric Infectious Diseases Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-infectious-diseases-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

18 "Pediatric Nephrology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-nephrology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

19 "Pediatric Pulmonology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-pulmonology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

20 "Pediatric Rheumatology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-rheumatology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

21 "Pediatric Transplant Hepatology Certification" American Board of Pediatrics, https://www.abp.org/content/pediatric-transplant-hepatology-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

22 "Sleep Medicine Certification" American Board of Pediatrics, https://www.abp.org/content/sleep-medicine-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

23 "Sports Medicine Certification" American Board of Pediatrics, https://www.abp.org/content/sports-medicine-certification (Accessed 4/9/2015); "General Criteria for Subspecialty Certification" American Board of Pediatrics, https://www.abp.org/content/general-criteria-subspecialty-certification (Accessed 4/10/2015).

OBSTETRICS AND GYNECOLOGY

Description and Scope

Scope

Obstetricians and gynecologists provide medical care specifically to women, often acting as women's general practitioners.[187] As such, these physicians will provide general care much like a general or family practitioner, but they are focused particularly on preventing, diagnosing, and treating conditions associated with the female anatomy (for example, breast and cervical cancer, urinary tract and pelvic disorders, and hormonal disorders).[188]

Education and Training

After completing medical school, physicians pursuing certification through the American Board of Obstetrics and Gynecology (ABOG) must complete at least four years of training through an ACGME-accredited residency program, followed by two years in clinical practice.[189] Residency programs for certification by the ABOG focus on reproductive health and ambulatory primary healthcare for women.[190] In order to complete the program, residents must demonstrate competence in: (1) the full range of obstetrics, including genetics, complications of pregnancy, births, and newborn care; (2) the full range of gynecology, including urinary disorders, breast disease, and reproductive endocrinology; and,(3) primary and preventive care.[191] Advance training is available in several subspecialty areas (see Table 7-7).[192]

Specialties

ABOG awards subspecialty certification in the areas of critical care medicine, gynecologic oncology, hospice and palliative medicine, maternal and fetal medicine, and reproductive endocrinology (see Table 7-7 for additional information).[193]

187 "Occupational Employment and Wages, May 2014: 29-1064 Obstetricians and Gynecologists" Bureau of Labor Statistics, http://www.bls.gov/oes/current/oes291064.htm (Accessed 4/13/15).
188 Ibid.
189 "American Board of Obstetrics and Gynecology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-obstetrics-and-gynecology/ (Accessed 4/9/15).
190 "ACGME Program Requirements for Graduate Medical Education in Obstetrics and Gynecology" Accreditation Council for Graduate Medical Education, July 1, 2011, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/220_obstetrics_and_gynecology_07012014.pdf (Accessed 4/9/15), p. 1-2.
191 Ibid, p. 14-17.
192 "American Board of Obstetrics and Gynecology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-obstetrics-and-gynecology/ (Accessed 4/9/15).
193 "About Physician Specialties: Obstetrics and Gynecology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/obstetrics.aspx (Accessed 02/05/10).

Table 7-7: OB/GYN Subspecialty Certification offered by the ABOG

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Obstetrics and Gynecology	Critical Care Medicine (CCM)	"An Obstetrician/Gynecologist who specializes in Critical Care Medicine has expertise in the diagnosis, treatment, and support of critically ill and injured patients, particularly trauma victims and patients with multiple organ dysfunction."	ABOG primary certification plus complete a course of education in critical care of no less than 12 months	(5)	5	2	0	68.8	99291, 99233, 99232, 99214, 99213, 99223, 99292, 94729, J2357, G8553
	Female Pelvic Medicine and Reconstructive Surgery	"A subspecialist in Female Pelvic Medicine and Reconstructive Surgery is a physician in Obstetrics and Gynecology or Urology who, by virtue of education and training, is prepared to provide consultation and comprehensive management of women with complex benign pelvic conditions, lower urinary tract disorders, and pelvic floor dysfunction. Comprehensive management includes those diagnostic and therapeutic procedures necessary for the total care of the patient with these conditions and complications resulting from them."	ABOG primary certification, plus complete three years of additional training in subspecialty area, plus pass both a written and oral examination.	(4)	113	21	92	36.5	99213, J1050, G0101, 99214, Q0091, 81002, 99396, J0897, 99212, 99000

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Obstetrics and Gynecology	Gynecologic Oncology	"The Gynecologic Oncologist provides consultation and comprehensive management, including those diagnostic and therapeutic procedures of patients with gynecologic cancer and resulting complications."	ABOG primary certification, plus complete three years of additional training in subspecialty area, plus pass both a written and oral examination.	(4)	500	336	117	56.3	J1453, J1642, J1100, J9035, J0881, J9264, J9171, Q9967, J2469, 99214
	Hospice and Palliative Medicine	"An Obstetrician/ Gynecologist with with specialization in Hospice and Palliative Medicine has special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family."	ABOG primary certification, plus complete one year fellowship training, plus pass the certification examination in hospice and palliative medicine.	(6)	2	1	1	61.0	99233, 99232, 99223, 99231, 99222, 99214, 99356, 99213, 99309, 99221
	Maternal and Fetal Medicine	"An Obstetrician/ Gynecologist with specialization in Maternal and Fetal Medicine focuses on patients with complications of pregnancy and their effect on both the mother and the fetus."	ABOG primary certification, plus complete three years of additional training in subspecialty area, plus pass both a written and oral examination.	(4)	640	420	134	57.0	99213, J1050, G0101, 99214, Q0091, 81002, 99396, J0897, 99212, 99000

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Obstetrics and Gynecology	Reproductive Endocrinology and Infertility	"The Reproductive Endocrinologist concentrates on hormonal functioning as it pertains to reproduction as well as the issue of infertility. They also are trained to evaluate and treat hormonal dysfunctions in females outside of infertility."	ABOG primary certification, plus complete three years of additional training in subspecialty area, plus pass both a written and oral examination.	(4)	659	536	53	56.9	99213, J1050, G0101, 99214, Q0091, 81002, 99396, J0897, 99212, 99000

Notes:

1 "American Board of Obstetrics and Gynecology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-obstetrics-and-gynecology/ (Accessed 4/10/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Subspecialties Certification" American Board of Obstetrics + Gynecology, https://www.abog.org/new/information.aspx?cat=Certification_Process&id=3 (Accessed 4/10/2015).

5 "Subspecialties Certification" American Board of Obstetrics + Gynecology, https://www.abog.org/new/information.aspx?cat=Certification_Process&id=3 (Accessed 4/10/2015); "Fellowship and Certification in Critical Care" American Board of Obstetrics & Gynecology, http://www.abog.org/publications/Critical%20Care%20Requirements_2014.pdf (Accessed 4/10/2015).

6 "Hospice and Palliative Medicine Eligibility Criteria for Certification and Recreation" American Board of Emergency Medicine, http://www.abem.org/public/docs/default-source/eligibility-documents/eligibility-criteria-2013-hpm-final.pdf?Status=Temp&sfvrsn=2 (Accessed 4/13/2015).

PART II–SURGICAL SPECIALTY PRACTICES

From 1980 through 2013, the number of surgeons in the United States grew 50%, raising the number of surgeons per 100,000 people from 28.8 to 30.9.[194] This growth is largely attributable to surgical sub-specialization, as the population of non-general surgeons grew 88% over this period, compared to 16% growth in the population of general surgeons.[195] An analysis of general and subspecialty surgical trends may be helpful in understanding and forecasting market conditions.

GENERAL SURGERY

Description and Scope

Scope

The practice of general surgery encompasses a wide scope of surgical services. As reported by ABMS, general surgeons diagnose and manage surgical and medical conditions of the alimentary tract, abdomen, breast, skin and soft tissue, endocrine system, and head and neck.[196] General surgeons must have a strong knowledge of the skills common to all surgical specialties: "anatomy, physiology, metabolism, pathology, wound healing shock and resuscitation, neoplasia, and nutrition."[197] They care for children, cancer patients, and patients who are critically ill or injured.[198] General surgeons diagnose and provide pre-operative, operative, and post-operative care.[199] The incorporation of the total care model embodied by the specialty is an "essential component of general surgery."[200] Additionally, general surgeons are providing a growing number of invasive and minimally invasive endoscopic services as technology progresses.[201]

194 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 441, 460. Population of surgeons in the U.S. calculated as the sum of the following self-identified specialties: (1) Colon/Rectal Surgery; (2) General Surgery; (3) Neurological Surgery; (4) Orthopedic Surgery; (5) Plastic Surgery; (6) Thoracic Surgery; and, (7) Urological Surgery.

195 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 441.

196 "About Physician Specialties: Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/AboutNote _Physician_Specialties/surgery.aspx (Accessed 08/27/09).

197 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 92.

198 "About Physician Specialties: Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About _Physician_Specialties/surgery.aspx (Accessed 08/27/09).

199 "Specialty of General Surgery Defined" The American Board of Surgery, February 2010, http://home.absurgery.org/default.jsp?aboutsurgerydefined (Accessed 5/10/10).

200 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 92.

201 "About Physician Specialties: Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_ Specialties/surgery.aspx (Accessed 08/27/09).

Education and Training

For entry into a general surgery residency program, a physician must have graduated from an accredited school of medicine.[202] General surgery residencies are normally five years in length, with some residencies requiring one year of research.[203]

To become certified by the American Board of Surgery (ABS) as a general surgeon, a physician must have a full license to practice medicine.[204] Further requirements include sixty months of progressive training at three or fewer residency programs, forty-eight weeks of full-time clinical activity, a categorical PGY-3 year, at least fifty-four months of clinical surgical experience, and the final two residency years must be in the same program.[205] Surgical education includes instruction in surgical diseases and conditions, procedural knowledge, and operational methods.[206] The residency program must integrate relevant patient care and procedural skills, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.[207]

Specialties

The ABS offers a general certificate in vascular surgery, which focuses on blood vessel disorders (excluding those disorders related to the brain and heart).[208] The ABS also recognizes hospice and palliative care, pediatric, hand, and critical care surgery as general surgery subspecialty areas, shown in Table 7-8.[209]

The remaining surgical specialties, discussed in more detail in the following sections, may require from one to five years of general surgery training.[210] The completion of five years of general surgery residency training is a prerequisite for certification in colon and rectal, pediatric, thoracic, and vascular surgery.[211]

202 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 92.
203 "ACGME Program Requirements for Graduate Medical Education in General Surgery" Accreditation Council for Graduate Medical Education, October 1, 2011, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/440_general_surgery_07012014.pdf (Accessed 4/9/15), p. 1 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 92.
204 "General Surgery Qualifying Exam" American Board of Surgery, 2009, http://home.absurgery.org/default.jsp?certgsqe (Accessed 8/27/09).
205 "Training Requirements" The American Board of Surgery, http://www.absurgery.org/default.jsp?certgsqe_training (Accessed 4/9/15).
206 "ACGME Program Requirements for Graduate Medical Education in General Surgery" Accreditation Council for Graduate Medical Education, October 1, 2011, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/440_general_surgery_07012014.pdf (Accessed 4/9/15), p. 1
207 Ibid, p.12-15.
208 "About Physician Specialties: Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About _Physician_Specialties/surgery.aspx (Accessed 08/27/09).
209 Ibid.
210 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 93.
211 Ibid.

Table 7-8: General Surgery Subspecialty Certification offered by ABS

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
General Surgery	Complex General Surgical Oncology	"A surgeon trained in complex general surgical oncology has specialized expertise in the diagnosis, multidisciplinary treatment, and rehabilitation of patients with rare, unusual, or complex cancers. These surgeons typically work in cancer centers or academic institutions and coordinate patient care with other oncologic specialists. They also provide community outreach in cancer prevention and education, as well as lead cancer studies."	ABS primary certification, plus licensure, plus two years of complex general surgical oncology training, plus complete the CGSO qualifying and certifying examinations	(5)	441	292	126	53.4	99213, 99232, 99212, 99214, 99231, 99203, Q9967, 99204, J0878, 99222
	Hospice and Palliative Medicine*	"A Surgeon who specializes in Hospice and Palliative Medicine has special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family."	ABS primary certification, plus complete one-year fellowship training, plus pass the certification examination in hospice and palliative medicine.	(6)	1	1	0	66.0	99213, 99232, 99212, 99214, 99231, 99203, Q9967, 99204, J0878, 99222

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
General Surgery	Pediatric Surgery	"A Pediatric Surgeon is a General Surgeon with specialized training in the diagnosis and care of premature and newborn infants, children, and adolescents. This care includes the detection and correction of fetal abnormalities, repair of birth defects, treatment of injuries in children and adolescents, and the treatment of the pediatric cancer patient, as well as conditions treated in adults by General Surgeons, such as appendicitis, hernias, acid reflux and bowel obstructions."	ABS primary certification, plus licensure, plus pass qualifying exam, plus complete a two-year training program in pediatric surgery which includes serving as a chief resident for a 12 month period	(7)	980	651	274	50.6	99213, 99232, 99212, 99214, 99231, 99203, Q9967, 99204, J0878, 99222
Vascular Surgery	Surgery of the Hand	"A Surgeon trained in Surgery of the Hand has expertise in the surgical, medical, and rehabilitative care of patients with diseases, injuries, and disorders affecting the hand, wrist, and forearm. Common conditions treated by a Hand Surgeon include carpal tunnel syndrome, trigger fingers, ganglia (lumps), sports injuries to the hand and wrist, and hand injuries involving cut tendons, nerves, and arteries. Hand Surgeons may be General Surgeons, Orthopedic Surgeons, or Plastic Surgeons who have received additional training in this area."	ABS primary certification, plus licensure, plus two years of active practice of surgery of the hand, plus a one-year fellowship in surgery of the hand, plus complete the certifying exam	(4)	43	34	9	38.7	J0775, 99213, 99203, J3301, J0702, 20550, 99212, 73110, 73130, 97110

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Vascular Surgery	Surgical Critical Care	"A Surgeon trained in Surgical Critical Care has expertise in the diagnosis, treatment and support of critically ill and injured patients, particularly trauma victims and patients with multiple organ dysfunctions. In addition, these surgeons are responsible for coordinating patient care among the primary physician, critical care staff, and other specialists."	ABS primary certification, plus licensure, plus a surgical critical care fellowship that must be at least 12 months in length, plus complete surgical critical care certifying examination	(8)	1,276	823	405	42.8	Q9967, 99213, 93880, 93970, 93971, 99212, 99214, Q9966, 93922, 93923

Notes:

1 "American Board of Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-surgery/ (Accessed 4/13/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Surgery of the Hand" The American Board of Surgery, http://www.absurgery.org/default.jsp?examoffered_hand (Accessed 4/13/2015); "Subspecialty Certificate in Surgery of the Hand" American Society for Surgery of the Hand, http://www.assh.org/About-ASSH/Get-Involved/Join-ASSH/Subspecialty-Certificate-in-Surgery-of-the-Hand (Accessed 4/13/2015).

5 "Complex General Surgical Oncology" The American Board of Surgery, http://www.absurgery.org/default.jsp?examoffered_surgonc (Accessed 4/13/2015); "ABS Announces New Certificate in Complex General Surgical Oncology" The American Board of Surgery, http://www.absurgery.org/default.jsp?newssurgonc (Accessed 4/13/2015).

6 "Hospice & Palliative Medicine Certifying Exam" The American Board of Surgery, http://www.absurgery.org/default.jsp?certhpm (Accessed 4/13/2015).

7 "Pediatric Surgery Qualifying Exam" The American Board of Surgery, http://www.absurgery.org/default.jsp?certpedqe (Accessed 4/13/2015).

8 "Surgical Critical Care Certifying Exam" The American Board of Surgery, http://www.absurgery.org/default.jsp?certsccce (Accessed 4/13/2015);

Industry Trends

Characteristics and Distribution

In 2013, there were 39,247 general surgeons practicing in the United States, 25,024 of whom were office based (63.7%) and 13,068 of whom were hospital based (33.3%).[212] Women represented 20.6% of the general surgeon population.[213] Additionally, the general surgeon population has endured a decrease in resident interest and an aging of the existing population, as demonstrated by the 33.5% of general surgeons who were over the age of 55, and only 21.8% of general surgeons who were under the age of 35.[214]

Supply and Demand

Reports in the 1980s predicted a surplus of general surgeons. However, the workforce may be facing a shortage, as suggested by the aging population and the growing population of the newly insured, as a result of the ACA.[215] Despite a significant increase in the surgical workforce during the past three decades, the net growth in general surgeons only represented a small fraction of that increase.[216] General surgeons comprise a decreasing proportion of the physician workforce, dropping from 7.3% in 1980 to 6.2% in 1990 to 3.8% in 2013.[217] As a consequence, general surgeons struggle to meet patient demand.[218]

The number of general surgeons dropped by 2.8% from 1990 to 2013, and the number of general surgeons per 100,000 people fell from 15.1 in 1980 to 12.5 in 2013, indicating a concerning loss of manpower.[219] This issue may be exacerbated by the aging demographic, as general surgeons are one of several physician specialties that regularly provides care for the elderly.[220] Between 2010 and 2025, the Health Resources and Services Administration projects the supply of general surgeons per capita to fall 1%,[221] while the population over the age of 65 is projected to almost double between 2012 and 2050.[222]

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212 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 67.
213 Ibid, p. 32.
214 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 9; "The Impending Disappearance of the General Surgeon" By Josef E. Fischer, American Medical Association, Journal of the American Medical Association, Vol. 298, No. 18 (November 14, 2007), p. 2191.
215 "Statement on the Surgical Workforce" American College of Surgeons, Bulletin of the American College of Surgeons, Vol. 92, No. 8, (August 2007), http://www.facs.org/fellows_info/statements/st-57.html (Accessed 5/10/10); "Trends in General Surgery Workforce Data" By Anathea C. Powell, David McAneny, and Erwin F. Hirsch, The American Journal of Surgery, Vol. 188, No. 1 (July 2004), p. 1, 7-8; "Medical Experts Say Physician Shortage Goes Beyond Primary Care" By Alicia Gallegos, Association of American Medical Colleges, AAMC Reporter, https://www.aamc.org/newsroom/reporter/february2014/370350/physician-shortage.html (Accessed 4/13/15).
216 "Longitudinal Trends in the U.S. Surgical Workforce 1981-2006: Overall Growth Has Stalled; General Surgery Supply Contracting" By Stephanie Poley et al., American College of Surgeon Health Policy Research Institute: Chapel Hill, NC, May 2009, p. 1.
217 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 442.
218 "Physician Shortages in the Specialties Taking a Toll" By Bonnie Darves, New England Journal of Medicine, October 31, 2011, http://www.nejmcareercenter.org/article/physician-shortages-in-the-specialties-taking-a-toll/ (Accessed 6/12/14).
219 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 441, 460.
220 "Physician Shortages in the Specialties Taking a Toll" By Bonnie Darves, New England Journal of Medicine, October 31, 2011, http://www.nejmcareercenter.org/article/physician-shortages-in-the-specialties-taking-a-toll/ (Accessed 6/12/14).
221 "Projecting the Supply of Non-Primary Care Specialty and Subspecialty Clinicians: 2010-2025" Health Resources and Services Administration, July 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/clinicalspecialties/clinicalspecialties.pdf (Accessed 4/8/15), p. 5.
222 "An Aging Nation: The Older Population in the United States" By Jennifer M. Ortman et al., United States Census Bureau, May 2014, http://www.census.gov/prod/2014pubs/p25-1140.pdf (Accessed 2/20/15), p. 1.

Highlights in the Four Pillars

Competition

Approximately 67% of general surgery residents pursue subspecialty certification; this serves as a dimension of competition in and of itself.[223] With an 88% growth in the population surgeons with specialized training,[224] which may require the completion of a general surgery residency, competencies across specialty areas may cause general surgery to diminish as an area of medicine. Alternately, many surgeons have specialized so much that they do not feel qualified to provide emergency services, with some surgeons only providing outpatient care.[225] This may further contribute to the already increasing demand for general surgery.

However, as fewer general surgeons enter a workforce that faces heightened demand, competition *within* the general surgery market may decrease. This competitive lull, caused by the surplus of existing job openings, may affect various geographic regions differently. For example, only 34% of rural counties saw declining ratios of general physicians from 1981 to 2006, while 60% of urban counties endured similar declines.[226]

With 92% of hospitals offering outpatient surgery and the number of Medicare-certified ASCs growing by 19% between 2006 and 2013,[227] a new dimension of competition has entered the general surgery market. Outpatient surgeries have become increasingly popular in the United States: indeed, as of 2014, over two-thirds of operations are performed in outpatient facilities.[228] Notably, the vast majority of ASCs are owned by the physicians who refer patients to the facility, which allows these physicians to compete with hospitals for patients in need of surgical procedures.[229] These outpatient sites of service have evolved into an attractive option consumers, including the aging baby boomer generation, who value convenient sources of healthcare services.[230]

Technology

Many new technologies exist that allow surgeons to be more precise while being minimally invasive. One such technology is robotic surgery that is used widely for endoscopic procedures. Adjustable arms on a machine can hold cameras or instruments or even perform programmed motions. These machines offer precision when surgeons cannot, thereby offering better dexterity and overcoming two-dimensional optic challenges.[231]

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223 "The General Surgery Job Market: Analysis of Current Demand for General Surgeons and Their Specialized Skills" By Marquita R. Decker, MD et al., Journal of the American College of Surgeons, Vol. 217, No. 6 (December 2013), p. 1133.
224 "Physician Characteristics and Distribution in the US" 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 441.
225 "Statement on the Surgical Workforce" American College of Surgeons, Bulletin of the American College of Surgeons, Vol. 92, No. 8, (August 2007), http://www.facs.org/fellows_info/statements/st-57.html (Accessed 5/10/10).
226 "Longitudinal Trends in the U.S. Surgical Workforce 1981-2006: Overall Growth Has Stalled; General Surgery Supply Contracting" By Stephanie Poley et al., American College of Surgeon Health Policy Research Institute: Chapel Hill, NC, May 2009, p. 3.
227 "A Data Book: Health care spending and the Medicare program" Medicare Payment Advisory Commission, June 2014, http://www.medpac.gov/documents/publications/jun14databookentirereport.pdf?sfvrsn=1 (Accessed 4/8/15), p. 99, 105.
228 "Popularity of Outpatient Surgery Centers Leads to Questions About Safety" By Sandra G. Boodman, Kaiser Health News, December 16, 2014, http://kaiserhealthnews.org/news/popularity-of-out-patient-surgery-centers-leads-to-questions-about-safety/ (Accessed 4/8/15).
229 Ibid.
230 "IBISWorld Industry Report 62149: Emergency & Other Outpatient Care Centers in the US" By Sarah Kahn, IBISWorld, April 2014, p. 7.
231 "The Road to Innovation: Emerging Technologies in Surgery" By Venita Chandra, Bulletin of the American College of Surgeons, Vol. 92, No. 7 (July 2007), p. 24; "Robotic Technology in Surgery: Past, Present, and Future" By David Camarillo et al., American Journal of Surgery, Vol. 188 (2004), http://www.americanjournalofsurgery.com/article/S0002-9610(04)00375-7/pdf (Accessed 4/13/15), p. 3S.

BARIATRIC SURGERY

Description and Scope

Scope

Bariatric surgery provides treatment options to patients who are severely obese and cannot lose weight through conventional means, as well as to patients with conditions that cause or are caused by obesity.[232] By using one of several surgical methods, bariatric surgeons can reduce digestive absorption, intake of nutrients and calories, or both.[233] Through bariatric surgery care, patients can achieve not only weight loss, but also treatment for metabolic conditions such as type 2 diabetes, hypertension, high cholesterol, nonalcoholic fatty liver disease, and obstructive sleep apnea.[234]

The introduction of minimally invasive procedures has contributed to the acceptability of bariatric procedures. Minimally invasive procedures tend to have a lower incidence of wound complications and reduced blood loss, narcotic requirements, and hospital stays than do open procedures.[235] In its credentialing guidelines, the American Society for Bariatric and Metabolic Surgery (ASBMS) differentiates between surgeons who perform minimally invasive bariatric procedures and surgeons who perform open procedures, and the criteria differ accordingly (for example, procedures involving stapling or compartmentalization of the gastrointestinal tract versus procedures that do not).[236]

Bariatric surgeries generally are categorized based on the methods by which they restrict food intake or induce mal-digestion or mal-absorption.[237] Four bariatric surgery procedures are approved for use in the United States: laparoscopic adjustable gastric band (LAGB), Roux-en-Y Gastric Bypass (RYGB), biliopancreatic diversion with a duodenal switch, and vertical banded gastrectomy (VBG).[238] Each procedure and mechanism produces different effects and alterations to the natural feelings of hunger and satiety, and each has different advantages and disadvantages (see Table 7-9 below).[239]

232 "Bariatric Surgery for Severe Obesity" National Institute of Diabetes and Digestive Kidney Diseases of the National Institutes of Health, U.S Department of Health and Human Services, March 2009, http://win.niddk.nih.gov/publications/gastric.htm (Accessed 10/06/09), p. 2, 3.

233 "Longitudinal Assessment of Bariatric Surgery (LABS)" National Institute of Diabetes and Digestive Kidney Diseases of the National Institute of Health, U.S. Department of Health and Human Services, Bethesda, MD: Weight-Control Information Network, March 2009, http://win.niddk.nih.gov/publications/PDFs/LABSFactSheet(final).pdf (Accessed 10/06/09), p. 1.

234 "Bariatric Surgical Society Takes on a New Name, New Mission, and New Surgery: Metabolic Surgery Expected to Play a Bigger Role in Treating Type 2 Diabetes and Other Metabolic Diseases" American Society for Metabolic and Bariatric Surgery: Gainsville, FL, August 22, 2007, http://www.asbs.org/Newsite07/resources/press_release_8202007.pdf (Accessed 10/06/09), p. 2.

235 "Surgical Approaches to Obesity" By Michael L. Kendrick and Gregory F. Dakin, Mayo Clinic Proceedings, Vol. 81 (10 Suppl) (October 2006), p. S18.

236 "Guidelines for Granting Privileges in Bariatric Surgery" American Society for Metabolic and Bariatric Surgery, October 2005, http://www.asbs.org/Newsite 07/resources/asbs_granting_privileges.htm (Accessed 10/6/09).

237 "Surgical Approaches to Obesity" By Michael L. Kendrick and Gregory F. Dakin, Mayo Clinic Proceedings, Vol. 81 (10 Suppl) (October 2006), p. S18.

238 "Bariatric Surgery for Severe Obesity" National Institute of Diabetes and Digestive Kidney Diseases of the National Institutes of Health, U.S Department of Health and Human Services, March 2009, http://win.niddk.nih.gov/publications/gastric.htm (Accessed 10/06/09), p. 2, 3.

239 "Surgical Approaches to Obesity" By Michael L. Kendrick and Gregory F. Dakin, Mayo Clinic Proceedings, Vol. 81 (10 Suppl) (October 2006), p. S18-S19.

Table 7-9: Operations Commonly performed for Treatment of Obesity[240]

Procedure	Mechanism	Description	Advantages	Disadvantages
Adjustable Gastric Banding	Restrictive	"...uses an inflatable band to squeeze the stomach into two sections: a smaller upper pouch and a larger lower section. The two sections are still connected by a very small channel, which slows down the emptying of the upper pouch."	Safer; Smaller scar; Faster recovery; Band can be adjusted or removed	Inferior weight loss; Increased likelihood of regaining weight
Sleeve Gastrectomy	Restrictive	Removes most of the stomach	Simpler surgery; Lower risk	Irreversible; Unknown long-term benefits
Gastric Bypass Surgery (Roux-en-Y Gastric Bypass)	Restrictive, malabsorptive	"...the stomach [is divided] into two parts, sealing off the upper section from the lower...the upper stomach [is then] directly attached to the lower section of the small intestine."	Rapid, substantial weight loss; Weight loss is long-term	Lower risk of malnutrition; Dumping syndrome; Irreversible
Biliopancreatic Diversion	Restrictive, malabsorptive	"…a more drastic version of a gastric bypass….[where] as much as 70% of [the] stomach [is removed] and bypasses even more of the small intestine ."	Most rapid and substantial weight loss; Larger meals may still be eaten	Higher risk of malnutrition; Dumping syndrome; Irreversible

Education and Training

Bariatric surgery is not an independent specialty area certified by its own board; however, it is a growing field that is attracting a number of surgeons.[241] In response, a joint task force of the American Society for Metabolic & Bariatric Surgery (ASMBS), The Society for Surgery of the Alimentary Tract (SSAT), the Society of American Gastrointestinal Endoscopic Surgeons (SAGES), and the Michigan Bariatric Surgery Collaborative (MBSC) published recommendations for credentialing of bariatric surgeons in 2013, including: (1) completion of a residency in general surgery; (2) certification by the American Board of Surgery or an equivalent board (e.g., American Osteopathic Board of Surgery); and (3) completion of a fellowship in bariatric surgery, among others.[242] Furthermore, the ASMBS has published core curriculum elements for fellowships in bariatric surgery, which include: (1) the epidemiology of obesity; (2) physiology and interactive mechanisms of morbidly obese patients; (3) psychology of a morbidly obese patient; (4) pre- and post-operative evaluation and management of bariatric patients; and (5) a variety of bariatric surgical procedures (e.g. gastric bypass and revisional weight loss surgery), among others.[243]

240 "Choosing a Type of Weight Loss Surgery" By R. Morgan Griffin, WebMD, May 29, 2014, http://www.webmd.com/diet/weight-loss-surgery/weight-loss-surgery-making-the-choice?print=true (Accessed 4/10/15).
241 "Joint task force recommendations for credentialing of bariatric surgeons" By William B. Inabnet III, MD, et al., Surgery for Obesity and Related Diseases, Vol. 9 (2013), p. 595.
242 Ibid, p. 596.
243 "Core Curriculum for American Society for Metabolic and Bariatric Surgery Fellowship Training Requirements" American Society for Metabolic and Bariatric Surgery, 2014, https://asmbs.org/wp/uploads/2015/01/2014-Core-Curriculum.pdf (Accessed 4/10/15).

Specialties

Other than distinguishing between bariatric surgeons who perform laparoscopic and those who perform open procedures, specialty areas have not been identified among bariatric surgeons.

COLON AND RECTAL SURGERY

Description and Scope

Scope

Colon and rectal surgeons have advanced knowledge and skills in the diagnosis, treatment, and management of diseases of the colon, rectum, and secondary organs and tissues involved in primary colon and rectal diseases.[244] They are trained in both surgical and endoscopic techniques.[245] Colon and rectal surgeons also may manage anorectal conditions in an office setting.[246] The scope of conditions that colon and rectal surgeons are trained to treat include: anorectal conditions, hemorrhoids, fissures, abscesses, fistulas, inflammatory bowel disease, chronic ulcerative colitis, Crohn's disease, diverticulitis, colonic neoplasms, cancer, polyps, familial polyposis, endoscopy of the colon and rectum, rigid and flexible sigmoidoscopy, colonoscopy, endoscopic polypectomy, anal incontinence, constipation, diarrhea, and rectal prolapse.[247]

Education and Training

The American Board of Colon and Rectal Surgery (ABCRS) certifies physicians who have completed approved colon and rectal programs, passed the ABS Qualifying Examination, provided their colorectal operative experience record and recommendations, and passed ABCRS's qualifying exam which tests their knowledge of colon and rectal surgery, including their knowledge of radiology and pathology.[248] Entrance into a colon and rectal surgery residency program requires graduation from an accredited medical school and the completion of a five-year general surgery residency.[249] Colon and rectal surgery residencies are one year in length.[250] These residency programs are designed to provide physicians with advanced expertise

244 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 7.
245 Ibid.
246 "About Physician Specialties: Colon and Rectal Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/colon.aspx (Accessed 08/27/09)
247 "Certification By the American Board of Colon and Rectal Surgery" American Society of Colon & Rectal Surgeons, http://www.fascrs.org/patients/abcrs-certification/ (Accessed 10/05/09).
248 Certification By the American Board of Colon and Rectal Surgery" American Society of Colon & Rectal Surgeons, http://www.fascrs.org/patients/abcrs-certification/ (Accessed 10/05/09; "ACGME Program Requirements for Graduate Medical Education in Colon and Rectal Surgery" Accreditation Council for Graduate Medical Education, June 17, 2010, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/060_colon_rectal_surgery_07012014.pdf (Accessed 4/9/15), p. 3, 8.
249 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 7; "ACGME Program Requirements for Graduate Medical Education in Colon and Rectal Surgery" Accreditation Council for Graduate Medical Education, June 17, 2010, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/060_colon_rectal_surgery_07012014.pdf (Accessed 4/9/15), p. 1.
250 "American Board of Colon and Rectal Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-colon-and-rectal-surgery/ (Accessed 4/9/15).

and skills in the treatment of colon and rectal diseases.[251] However, during the course of the residency, physicians learn a great deal about radiology, pathology, and gastroenterology as they relate to colon and rectal surgery.[252] Residents in the program must develop a strong understanding of the essential colon and rectal surgery disorders as well as the surgical methods used for treating these disorders, such as abdominal and endoscopic procedures.[253]

Specialties

There are no ABMS-recognized subspecialties in colon and rectal surgery.[254]

NEUROLOGICAL SURGERY

Description and Scope

Scope

Neurosurgeons practice the prevention, diagnosis, examinations, treatment, and care for patients with neurological conditions through the utilization of invasive and noninvasive procedures.[255] They care for patients with disorders of the central, peripheral, and autonomic nervous systems, as well as associated support structures and vasculature (including the spine and carotid arteries).[256] Neurological surgeons are trained in the care of children and adults, as well as injured and critically ill patients.[257]

Neurosurgery treatments include a multitude of invasive and noninvasive therapies. Treatments may include the prescription of medication, surgical treatment, stereotactic radiological treatment, or rehabilitation.[258] Neurosurgeons assess patients through case histories, physical examination and evaluation, and diagnostic procedures.[259]

251 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 7.
252 "ACGME Program Requirements for Graduate Medical Education in Colon and Rectal Surgery" Accreditation Council for Graduate Medical Education, June 17, 2010, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/060_colon_rectal_surgery_07012014.pdf (Accessed 4/9/15), p. 10, 13.
253 "ACGME Program Requirements for Graduate Medical Education in Colon and Rectal Surgery" Accreditation Council for Graduate Medical Education, June 17, 2010, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/060_colon_rectal_surgery_07012014.pdf (Accessed 4/9/15), p. 11, 13, 14.
254 "About Physician Specialties: Colon and Rectal Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/colon.aspx (Accessed 08/27/09).
255 "About Physician Specialties: Neurological Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/neurological.aspx (Accessed 08/28/09).
256 Ibid.
257 Ibid.
258 "About Physician Specialties: Neurological Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/neurological.aspx (Accessed 08/28/09); "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 31.
259 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 31.

Education and Training

Board certification is granted by the American Board of Neurological Surgery.[260] Prior to sitting for the board examination, residents must complete 84 months of neurosurgical practice including 12 months as a chief resident, 21 months in one program, 3 months in basic neuroscience, 3 months of critical care relevant to neurosurgery, 6 months of structured education in general care, and outside rotations.[261] Residents must become competent in cranial surgical procedures, multiple organ and cranial trauma care, and an understanding of anesthesia management and risks.[262]

After passage of the written examination, residents must complete a three-part series of face-to-face examinations.[263] Once residents have passed oral examinations, they may be granted board certification in neurosurgery.[264]

Specialties

The ABN does not award certification for subspecialties; however, neurosurgeons may focus on cerbrovascular and skull base surgery, endovascular surgery, functional neurosurgery, radiosurgery, movement disorders, neurointensive care, neuro-oncology, neurotrauma, pediatric neurosurgery, spine services, stereotactic functional surgery, or a combination of these subspecialties.[265]

OPHTHALMIC SURGERY

Description and Scope

Scope

Ophthalmic surgeons, also known as ophthalmologists, utilize medical and surgical knowledge to provide comprehensive care of the eyes and vision.[266] These specialists are the only physicians trained in the diagnosis and treatment of eyes.[267] Ophthalmologists use the full spectrum of diagnostic procedures, as well as invasive and noninvasive surgical techniques to provide care

260 "American Board of Neurological Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-neurological-surgery/ (Accessed 4/9/15).
261 "Training Requirements" The American Board of Neurological Surgery, http://www.abns.org/en/Board%20Certification/Training%20Requirements/July%202013.aspx/ (Accessed 4/9/15).
262 "ACGME Program Requirements for Graduate Medical Education in Neurological Surgery" Accreditation Council for Graduate Medical Education, September 30, 2012, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/160_neurological_surgery_07012014.pdf (Accessed 4/9/15), p. 15-16.
263 "Oral Examination" The American Board of Neurological Surgery, http://www.abns.org/Board%20Certification/Oral%20Examination.aspx/ (Accessed 4/9/15).
264 "Oral Examination" The American Board of Neurological Surgery, http://www.abns.org/Board%20Certification/Oral%20Examination.aspx/ (Accessed 4/9/15).
265 "About The American Board of Neurological Surgery—ABNS" The American Board of Nuerological Surgery, 2005, http://www.abns.org/content/ about_abns.asp (Accessed 08/28/09); "Sub-Specialties in Neurosurgery" Jackson Health System, http://www.jhsmiami.org/body.cfm?id=8970 (Accessed 8/28/09).
266 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 49.
267 Ibid, p. 48.

for patients of all ages.[268] Ophthalmic surgeons commonly prescribe medication, as well as glasses and contact lenses, and provide consultation services to patients with systemic diseases such as diabetes and hypertension.[269] Common ophthalmic surgical interventions carried out in this specialty include cataract surgery, glaucoma surgery, and refractive eye surgery.[270]

Education and Training

Graduation from an accredited medical or osteopathic school is a prerequisite for admission to an ophthalmic surgical residency program.[271] Residency programs require students to spend one year in a direct patient care internship plus three to four years in an ophthalmic program before they can sit for the board examination.[272] The American Board of Ophthalmology (ABO) grants board certification in ophthalmic surgery.[273] Physicians also must maintain licensure in each state in which they practice.[274] During the course of the residency program, a physician is exposed to a wide variety of ophthalmic diseases and disorders in an effort to help the practitioners develop the skill and techniques needed to provide appropriate and comprehensive eye care.[275]

Specialties

The ABO does not offer subspecialty certification. However, ophthalmologists often focus their expertise in a variety of areas, including pediatric ophthalmology, glaucoma, and neuro-ophthalmology.[276]

ORTHOPEDIC SURGERY

Description and Scope

Scope

Orthopedic surgeons, also known as orthopedists, have ample knowledge and highly developed skills in the prevention, diagnosis, management, and treatment of musculoskeletal conditions of the bones, joints, ligaments, tendons, and muscles.[277] The specialty focuses on treatment of congenital deformities, trauma, infection, tumors, and metabolic disorders that affect the spine,

268 "American Board of Ophthalmology" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/ophthalmology.aspx (Accessed 4/13/15).
269 "About Physician Specialties: Ophthalmology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/ophthalmology.aspx (Accessed 09/11/09).
270 "Ophthalmology" American College of Surgeons, https://www.facs.org/education/resources/residency-search/specialties/ophthal (Accessed 4/13/15).
271 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 48; "Requirements for Certification" American Board of Ophthalmology, http://abop.org/board-certification/requirements/ (Accessed 4/9/15).
272 "Requirements for Certification" American Board of Ophthalmology, http://abop.org/board-certification/requirements/ (Accessed 4/9/15).
273 "About the Board" American Board of Ophthalmology, http://abop.org/about/ (Accessed 4/9/15).
274 "Requirements for Certification" American Board of Ophthalmology, http://abop.org/board-certification/requirements/ (Accessed 4/9/15).
275 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 48.
276 "What you can do: Subspecialties" American Academy of Ophthalmology, http://www.aao.org/careers/envision/subspecialties.cfm (Accessed 4/13/15).
277 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 52.

hands, feet, knees, hips, shoulders, and elbows.[278] Orthopedic surgeons also may be concerned with secondary conditions that affect the muscular and nervous systems.[279]

Education and Training

To be accepted into an orthopedic residency program, a physician must have graduated from an accredited medical school.[280] Orthopedic surgery residencies are required by the American Board of Orthopedic Surgery (ABOS) to be at least five years in length with the last two years spent in a single program.[281] Applicants must also complete a two-part examination, written and oral, with a 20-month period of practice and peer review between the two exams.[282] During training, residents develop a strong understanding of hospital care, rehabilitation, and surgical procedures, as well as competency in diagnosing orthopedic disorders.[283]

Specialties

The ABOS offers subspecialty certification in orthopedic sports medicine and surgery of the hand.[284] See Table 7-10 for further detail regarding these subspecialty areas.

278 "American Board of Orthopaedic Surgery" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/orthopaedic-surgery.aspx (Accessed 4/13/15).
279 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 52.
280 Ibid.
281 "Overview of Board Certification" The American Board of Orthopaedic Surgery, https://www.abos.org/certification/board-certification.aspx (Accessed 4/9/15).
282 Ibid.
283 "ACGME Program Requirements for Graduate Medical Education in Orthopaedic Surgery" Accreditation Council for Graduate Medical Education, October 1, 2011, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/260_orthopaedic_surgery_07012014.pdf (Accessed 4/9/15), p. 10.
284 "Specialties and Subspecialties: Recognized Physician Specialty and Subspecialty Certificates, American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Physicians/specialties.aspx (Accessed 8/24/09).

Table 7-10: Orthopedic Surgery Subspecialty Certification offered by ABOS

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Orthopedic Surgery	Orthopedic Sports Medicine	"An Orthopedic Surgeon educated in Sports Medicine has expertise in the surgical and medical care for all structures of the musculoskeletal system directly affected by participation in sporting activity. This specialist is proficient in areas including conditioning, training and fitness, athletic performance, and the impact of dietary supplements, pharmaceuticals, and nutrition on performance and health, coordination of care within the team setting utilizing other health care professionals, field evaluation and management, soft tissue biomechanics, and injury healing and repair. Knowledge and understanding of the principles and techniques of rehabilitation, athletic equipment, and orthotic devices enables the specialist to prevent and manage athletic injuries."	ABOS primary certification, plus licensure, plus one year in an accredited sports medicine program	(4)	1,941	1,646	283	42.3	J7325, 99213, 20610, J3301, 99214, 99203, 99212, 97110, J1030, J0702

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Orthopedic Surgery	Surgery of the Hand	"A Surgeon trained in Surgery of the Hand has expertise in the surgical, medical, and rehabilitative care of patients with diseases, injuries, and disorders affecting the hand, wrist, and forearm. Common conditions treated by a hand surgeon include carpal tunnel syndrome, trigger fingers, ganglia (lumps), sports injuries to the hand and wrist, and hand injuries involving cut tendons, nerves, and arteries. Hand Surgeons may be General Surgeons, Orthopedic Surgeons, or Plastic Surgeons who have received additional training in this area."	ABOS primary certification, plus licensure, plus one year in an accredited surgery of the hand program	(5)	660	509	145	36.6	J0775, 99213, 99203, J3301, J0702, 20550, 99212, 73110, 73130, 97110

Notes:

1 "American Board of Orthopaedic Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-orthopaedic-surgery/ (Accessed 4/13/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Orthopaedic Sports Medicine" The American Board of Orthopaedic Surgery, https://www.abos.org/certification/sports-subspecialty.aspx (Accessed 4/13/2015).

5 "Subspecialty Certificate in Surgery of the Hand" The American Board of Orthopaedic Surgery, https://www.abos.org/certification/hand-subspecialty.aspx (Accessed 4/13/15).

OTOLARYNGOLOGY

Description and Scope

Scope

Otolaryngologists (head and neck surgeons) provide diagnostic, medical, and surgical treatment and management care to patients suffering from diseases and disorders of the ears, nose, throat, respiratory system, and related structures in the head and neck.[285] Otolaryngology is the oldest medical specialty in the United States.[286] Physicians in this specialty area are expected to demonstrate proficiency in:

> "the basic medical sciences relevant to the head and neck; the respiratory and upper alimentary systems; the communication sciences, including knowledge of audiology and speech pathology; the chemical senses and allergy, endocrinology and neurology as they relate to the head and neck; the clinical aspects of diagnosis and the medical and/or surgical therapy or prevention for diseases, neoplasms, deformities, disorders and/or injuries of the ears, the respiratory and upper alimentary systems, the face, jaw, and other head and neck systems."[287]

Otolaryngologists may display particular expertise in a number of areas, the most general of which include head and neck oncology and facial plastic and reconstructive surgery.[288]

Education and Training

After graduating from an accredited medical school, physicians pursuing certification in otolaryngology must complete a five-year residency program in otolaryngology.[289] Residency programs consist of 9 months of basic medical and surgical care and anesthesia training, 48 months of progressive education in the specialty, and a year of senior residency.[290]

After completing a residency program that has been approved by the program director, candidates may apply for the certification. Certification by the American Board of Otolaryngology (ABOto) involves two examinations: a written examination[291] and an oral examination involving a variety of practice areas designed to imitate a patient care experience.[292] Residents undergo training in head and neck surgery, diagnosis of conditions, as well as patient safety and ethics.[293]

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285 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 57.
286 "Find Out How You, Your Family, and Friends Can Enhance Patient Care" American Academy of Otolaryngology-Head and Neck Surgery Foundation: Alexandria, VA, 2009, http://www.entnet.org/EducationAndResearch/upload/PIP-Brochure.pdf (Accessed 10/6/09).
287 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 57.
288 Ibid.
289 "American Board of Otolaryngology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-otolaryngology/ (Accessed 4/9/15).
290 "Training Requirements" American Board of Otolaryngology, http://www.aboto.org/resident-policies.html (Accessed 4/9/15).
291 "Qualifying Exam" American Board of Otolaryngology, http://www.aboto.org/qualifying_exam.html (Accessed 4/9/15).
292 "Oral Certifying Exam" American Board of Otolaryngology, http://www.aboto.org/oral_certification.html (Accessed 4/9/15).
293 "Qualifying Exam" American Board of Otolaryngology, http://www.aboto.org/qualifying_exam.html (Accessed 4/9/15).

Specialties

In addition to pursing sub-certification in neurotology, sleep medicine, pediatric otolaryngology, or plastic surgery within the face and neck, otolaryngologists may choose to focus their training on one or more of the following noncertified areas: allergy, facial plastic and reconstructive surgery, head and neck surgery (benign and malignant tumors), laryngology (voice and swallowing conditions), otology and audiology, and rhinology (nose and sinus conditions).[294] See Table 7-11 for an outline and detailed description of these certified subspecialties.

294 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 57.

Table 7-11: Otolaryngology Subspecialty Certification offered by ABOto

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Otolaryngology	Neurotology	"A Neurotologist has special expertise in the management of diseases of the inner ear, temporal bone, and skull base, including tumors and other conditions"	ABOto primary certification, plus licensure, plus complete fellowship in neurotology that must be 24 months in length, plus pass oral examination	(4)	204	156	43	50.0	99213, 95165, 95004, 99203, 99214, 69210, 95024, 31575, 95117, G8553
	Pediatric Otolaryngology	"A Pediatric Otolaryngologist has special expertise in the management of infants and children with disorders that include congenital and acquired conditions involving the aerodigestive tract, nose and paranasal sinuses, the ear, and other areas of the head and neck and in the diagnosis, treatment and management of childhood disorders of voice, speech, language, and hearing"	ABOto primary certification, plus fellowship training in pediatric otolaryngology of at least 12 months	(5)	245	164	72	45.4	99213, 95165, 95004, 99203, 99214, 69210, 95024, 31575, 95117, G8553
	Plastic Surgery Within the Head and Neck*	"An Otolaryngologist trained in this area has additional expertise in plastic and reconstructive procedures within the head, face, neck and associated structures, including cutaneous head and neck oncology and reconstruction, management of maxillofacial trauma, soft tissue repair and cosmetic surgery"	American Board of Plastic Surgery (or American Board of Otolaryngology or American Board of Surgery) primary certification, plus one- or two-year fellowship program consisting of entirely clinical or clinical- and research-based training	(6)	4	4	0	39.3	99213, 99212, J3010, 99203, J0585, 99214, J0775, 99202, 99204, 11042

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Otolarygology	Sleep Medicine**	"An Otolaryngologist with demonstrated expertise in the diagnosis and management of clinical conditions that occur during sleep, that disturb sleep, or that are affected by disturbances in the wake-sleep cycle. This specialist is skilled in the analysis and interpretation of comprehensive polysomnography, and well-versed in emerging research and management of a sleep laboratory"	ABOto primary certification, plus licensure, plus complete 12 months of sleep medicine fellowship	(7)	2	1	1	46.5	99213, 95165, 95004, 99203, 99214, 69210, 95024, 31575, 95117, G8553

Notes:

1 "American Board of Otolaryngology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-otolaryngology/ (Accessed 4/13/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Neurotology" American Board of Otolaryngology, http://www.aboto.org/neuro_certification.html (Accessed 4/13/2015); "ACGME Program Requirements for Graduate Medical Education in Neurotology" Accredited Council for Graduate Medical Education, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/286_neurotology_07012014.pdf (Accessed 4/13/2015).

5 "ACGME Program Requirements for Graduate Medical Education in Pediatric Otolaryngology" Accredited Council for Graduate Medical Education, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/288_pediatric_otolaryngology_07012014_1-YR.pdf (Accessed 4/16/2015).

6 "US/Canadian Applicants" American Head & Neck Society, 2015, http://www.ahns.info/residentfellow/fellowships/uscanadian-applicants/ (Accessed 4/10/15).

7 "How to Apply" American Board of Otolaryngology, http://www.aboto.org/sleep-how_to.html (Accessed 4/13/2015).

PLASTIC SURGERY

Description and Scope

Scope

Plastic surgeons perform multiple invasive and noninvasive surgical procedures and therapies. They utilize a combination of fundamental medical and surgical knowledge and surgical expertise to excise, repair, replace, and reconstruct deformities and dysfunctions of the skin and underlying musculoskeletal structures.[295] Plastic surgeons may also apply cosmetic or aesthetic surgical principles and procedures to improve a patient's appearance and self-image.[296] Physicians in this specialty are concerned with the medical and surgical diagnosis and treatment of craniofacial structures, oral pharynx, upper and lower limbs, trunk, breasts, and external genitalia.[297]

Reconstructive surgeries are performed on physical abnormalities such as congenital defects, developmental deformities, and damage due to trauma, infection, and tumors.[298] Reconstructive surgery may serve a dual purpose to restore function and aesthetic appearance to damaged or deformed structures of the body.[299]

Alternately, cosmetic surgery is concerned with the enhancement of an individual's appearance and self-esteem through fundamental medical and surgical knowledge and expertise.[300] The specialty combines principles from dermatology, facial plastic, general surgery, plastic surgery, otolaryngology, oculoplastic surgery, gynecological surgery, oromaxillofacial surgery, and other surgeries to obtain a higher level of skill and understanding.[301] However, unlike other surgical services, cosmetic surgery purely consists of elective procedures performed on functioning areas of the body.[302]

Education and Training

In order to become certified by the American Board of Plastic Surgery (ABPS), candidates must first complete six years of residency training.[303] This training may consist of either: (1) an *integrated* residency program, which is six years long and incorporates training on general surgery and a minimum of three years of specific training in plastic surgery or (2) an *independent* residency program, which involves three years of specific training in plastic surgery, and

295 "American Board of Plastic Surgery" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/plastic-surgery.aspx (Accessed 4/13/15).
296 Ibid.
297 Ibid.
298 "Plastic Surgery Procedures: Plastic Surgery Encompasses Both Cosmetic and Reconstructive Surgery" American Board of Plastic Surgery, http://www.plasticsurgery.org/Patients_and_Consumers/Procedures.html (Accessed 10/6/09).
299 Ibid.
300 Ibid.
301 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 73.
302 "Plastic Surgery Procedures: Plastic Surgery Encompasses Both Cosmetic and Reconstructive Surgery" American Board of Plastic Surgery, http://www.plasticsurgery.org/Patients_and_Consumers/Procedures.html (Accessed 10/6/09).
303 "American Board of Plastic Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-plastic-surgery/ (Accessed 4/10/15).

requires candidates to have previously completed a residency in one of several surgical fields (e.g., general surgery, orthopaedic surgery, etc.).[304] Notably, candidates who hold a dental doctorate degree (instead of a medical doctorate degree) may substitute an educational program in oral and maxillofacial surgery as a pre-requisite to the *independent* residency option.[305] In either format, the plastic surgery residency program educates candidates in the surgical treatment of congenital defects, neoplasms, burns, and trauma, as well as aesthetic surgical techniques.[306] Once a physician has completed residency training and been certified by the ABPS, they may seek advanced training in a plastic surgery sub-specialty.[307]

Specialties

The ABMS and the ABPS recognize two subspecialties with additional qualifications: plastic surgery within the head and neck and surgery of the hand (see table 7-12).[308] It is important to note that cosmetic and reconstructive plastic surgery are not subspecialty areas but, instead, are types of plastic surgery procedures. Rather, these two groups of procedures are defined by the intended purposes behind the procedures performed, the characteristic market drivers for each group, and the degree to which physicians are reimbursed when performed procedures in each group.[309]

304 "ACGME Program Requirements for Graduate Medical Education in Plastic Surgery" Accreditation Council for Graduate Medical Education, June 9, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/360_plastic_surgery_07012014.pdf (Accessed 4/10/2015), p. 1-2.

305 Ibid p. 2.

306 Ibid, p. 10-11.

307 "American Board of Plastic Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-plastic-surgery/ (Accessed 4/10/2015).

308 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 73.

309 "Plastic Surgery Procedures: Plastic Surgery Encompasses Both Cosmetic and Reconstructive Surgery" American Board of Plastic Surgery, http://www.plasticsurgery.org/Patients_and_Consumers/Procedures.html (Accessed 10/6/09).

Table 7-12: Plastic Surgery Subspecialty Certification offered by the ABPS

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (5)	Patient Care (5)		Mean Age of Physicians (5)	Representative Current Procedural Terminology Codes (4)
						Office-Based	Hospital-Based		
Plastic Surgery	Plastic Surgery Within the Head and Neck*	A Plastic Surgeon trained in this area has additional expertise in plastic and reconstructive procedures within the head, face, neck, and associated structures, including cutaneous head and neck cancer and reconstruction, management of maxillofacial trauma, soft tissue repair, and neural surgery.	American Board of Plastic Surgery (or American Board of Otolaryngology or American Board of Surgery) primary certification, plus one- or two-year fellowship program consisting of entirely clinical or clinical and research based training	(3)	9	6	3	46.6	99213, 99212, J3010, 99203, J0585, 99214, J0775, 99202, 99204, 11042
	Surgery of the Hand	A Surgeon trained in Surgery of the Hand has expertise in the surgical, medical, and rehabilitative care of patients with diseases, injuries, and disorders affecting the hand, wrist, and forearm. Common conditions treated by a hand surgeon include carpal tunnel syndrome, trigger fingers, ganglia (lumps), sports injuries to the hand and wrist, and hand injuries involving fractures, dislocations, lacerated tendons, nerves, and arteries. Hand Surgeons may be General Surgeons, Orthopedic Surgeons, or Plastic Surgeons who have received additional training in this area.	American Board of Plastic Surgery primary certification, plus current and valid licensure, plus a twelve month specialty fellowship accredited by the ACGME, plus two years clinical practice of surgery of the hand, plus submission of a list of cases of surgery of the hand managed during a consecutive 12 month period within the two years preceding application (in at least six of nine categories)	(2)	82	55	24	38.3	99213, 99212, J3010, 99203, J0585, 99214, J0775, 99202, 99204, 11042

Notes:

1 "American Board of Plastic Surgery" American Board of Medical Specialties, 2015, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-plastic-surgery/(Accessed 4/10/2015).

2 "General Requirements" American Society for Surgery of the Hand, 2015, http://www.assh.org/About-ASSH/Get-Involved/Join-ASSH/Subspecialty-Certificate-in-Surgery-of-the-Hand (Accessed 4/10/15).

3 "US/Canadian Applicants" American Head & Neck Society, 2015, http://www.ahns.info/residentfellow/fellowships/uscanadian-applicants/ (Accessed 4/10/15).

4 Top 10 procedure codes by frequency for all specialties - 2014, The Frank Cohen Group, 2014.

5 "Physician Characteristics and Distribution in the US: 2015 Edition," By Derek Smart, Chicago, IL: American Medical Association, 2015, p. 15-28.

THORACIC AND CARDIOVASCULAR SURGERY

Description and Scope

Scope

Thoracic surgeons are highly experienced and have developed technical skills in the prevention, diagnosis, management, and treatment of thoracic diseases and conditions of the organs and systems of the chest.[310] As such, thoracic surgeons are not relegated to only the thoracic area.[311] These surgeons care for adults and children with "congenital anomalies, malfunctions, disease, and injuries of the heart and great vessels, the trachaeobronchial system and lungs, esophagus, and other mediastinal contents, diaphragm and circulatory system."[312]

This specialty focuses on minimally invasive and invasive surgical techniques, as well as invasive and noninvasive diagnostic tests.[313] Thoracic surgeons must have a significant knowledge of cardiorespiratory physiology, oncology, heart assist devices, respiratory support systems, and heart rhythms.[314]

Education and Training

Certification by the American Board of Thoracic Surgery (ABTS) requires six to eight years of residency training,[315] which is offered in one of three formats. The *independent program* requires candidates to first complete a residency in general surgery, followed by two years of specialized training in thoracic surgery.[316] The *joint surgery/thoracic surgery program* (also referred to as the 4+3 program) is a seven-year residency that prepares candidates for certification in both general surgery and thoracic surgery.[317] Finally, the *integrated program* requires residents to complete six years of clinical thoracic surgery education, two to three years of which must integrate core surgical education, and the remaining three to four years of which must integrate education a variety of surgical fields (e.g. oncology, transplantation, and laparoscopy, etc.).[318] Regardless of format, all thoracic surgery residencies require candidates to demonstrate several key competencies, including: (1) pre-operative management and the selection and timing of operative intervention; (2) providing critical care to patients with thoracic and cardiovascular surgical disorders; and (3) pathologic and diagnostic aspects of cardiothoracic disorders, among

310 "About Physician Specialties: Thoratic Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/thoracic.aspx (Accessed 09/10/09).
311 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 95.
312 Ibid.
313 "About Physician Specialties: Thoratic Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/thoracic.aspx (Accessed 09/10/09).
314 Ibid.
315 "American Board of Thoracic Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-thoracic-surgery/ (Accessed 4/10/15).
316 "ACGME Program Requirements for Graduate Medical Education in Thoracic Surgery" Accreditation Council for Graduate Medical Education, September 29, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/460_thoracic_surgery_07012014.pdf (Accessed 4/10/15), p. 1.
317 Ibid, p. 1-2.
318 Ibid, p. 2.

others.[319] Once a physician has completed residency training and certification by the ABTS, they may seek more specialized training within the field.[320]

Specialties

The ABTS recognizes only the subspecialty of congenital cardiac surgery with certification (see Table 7-13).[321] However, a physician may choose to concentrate in several areas of interest.[322] Thoracic and cardiovascular surgeons have become extremely specialized during the past ten to twenty years.[323] Although most practice adult cardiac and thoracic surgery, other major areas of focus include general thoracic (for example, lung and esophageal surgery), vascular, and congenital (for example, pediatric cardiac) surgery.[324]

319 "ACGME Program Requirements for Graduate Medical Education in Thoracic Surgery" Accreditation Council for Graduate Medical Education, September 29, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/460_thoracic_surgery_07012014.pdf (Accessed 4/10/2015), p. 11-12.

320 "American Board of Thoracic Surgery" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-thoracic-surgery/ (Accessed 4/10/2015).

321 "About Physician Specialties: Thoratic Surgery" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/thoracic.aspx (Accessed 09/10/09).

322 Ibid.

323 "Shortage of Cardiothoracic Surgeons is Likely by 2020" By Atul Grover, et al., Circulation, Vol. 120, No. 6 (August 11, 2009), p. 488.

324 Ibid.

Table 7-13 Thoracic Surgery Subspecialty Certification offered by ABTS

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (4)	Patient Care (4)		Mean Age of Physicians (4)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Thoracic Surgery	Congenital Cardiac Surgery	Congenital Cardiac Surgery refers to the procedures that are performed to repair the many types of heart defects that may be present at birth and can occasionally go undiagnosed into adulthood. These may include patching holes between chambers of the heart, improving blood flow to the lungs, or heart and lung transplantation.	ABTS primary certification and good standing, plus licensure, plus a one-year congenital cardiac surgery fellowship program, plus operative case experience verified by the congenital heart surgery program director that meets or exceeds volume and distribution requirements, plus ethical standing in the profession that is acceptable to the board	(2)	33	19	13	41.0	99213, 99214, Q9967, 99231, 99223, 99232, 99212, 99205, 99204, 99233

Notes:

1 "American Board of Thoracic Surgery" American Board of Medical Specialities, 2015, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-thoracic-surgery/(Accessed 4/10/2015).

2 "Pathway One: Subspecialty Certification for Candidates Trained After July 1, 2008" American Board of Thoracic Surgery, 2011, https://www.abts.org/root/home/congenital-cardiac-subspecialty/pathway-one.aspx (Accessed 4/10/2015).

3 Top 10 procedure codes by frequency for all specialties - 2014, The Frank Cohen Group, 2014.

4 "Physician Characteristics and Distribution in the US: 2015 Edition" By Derek Smart, Chicago, IL: American Medical Association, 2015, p. 15-28.

UROLOGY

Description and Scope

Scope

Urologists have highly developed skills and use advanced techniques for the prevention, diagnosis, management, and treatment of the genito-urinary system and conditions of related structures, including vasculature.[325] They are proficient in the use of all diagnostic techniques including imaging, biochemical and immunological modalities, and endoscopic techniques.[326] The specialty also utilizes exenterative, reconstructive, microsurgical, and vascular surgical procedures.[327] Urologists care for children and adults, including men and women, with diseases including malignancies of the genito-urinary tract, calculus diseases, neurological disorders, male sexual dysfunction, infertility, infections, congenital abnormalities, obstructive diseases, trauma, and renal transplantation.[328]

Education and Training

To enter into a urology residency program, physicians must have a degree from an accredited allopathic or osteopathic medical school.[329] Additionally, after completing medical school, physicians must have completed at least one to two years of residency training, desirably in general surgery,[330] followed by a urological residency that lasts three years.[331] The American Board of Urology (ABU) requires 48 months in an approved clinical urology program.[332] In sum, the ABU requires a minimum of 5 years of clinical, postgraduate training.[333] In addition, surgeons must serve as chief residents for at least one year during the last two years of their residency.[334]

Successful completion of Parts I and II of the ABU qualifying boards is also required to obtain urology certification.[335] Finally, physicians also must have completed and documented at least sixteen months in the practice of urology.[336]

325 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 97.
326 Ibid.
327 Ibid.
328 Ibid.
329 "Residency Requirements for Certification" American Board of Urology, https://www.abu.org/residencyRequirements.aspx (Accessed 4/10/15).
330 "Urology" American College of Surgeons, https://www.facs.org/education/resources/residency-search/specialties/urology (Accessed 4/10/15).
331 Ibid.
332 "Residency Requirements for Certification" American Board of Urology, https://www.abu.org/residencyRequirements.aspx (Accessed 4/10/15).
333 Ibid.
334 Ibid.
335 "Certification: Qualifying (Part 1) Examination Overview" American Board of Urology, https://www.abu.org/certification_QEOverview.aspx (Accessed 4/10/15); "Certification: Certifying (Part 2) Examination Overview" American Board of Urology, https://www.abu.org/certification_CEOverview.aspx (Accessed 4/10/15).
336 "The Certification Process" American Board of Urology, http://www.abu.org/certification.aspx (Accessed 4/10/15).

Specialties

The AMBS and ABU offer subspecialty certification in two fields: (1) pediatric urology and (2) female pelvic medicine and reconstructive surgery.[337] However, fellowships are available in the subspecialty areas mentioned in previous sections.

PART III–MEDICAL SPECIALTY PRACTICES

DESCRIPTION AND SCOPE

Scope

These remaining specialty areas comprise the portion of specialty medicine not related to the provision of surgical care. They are characterized by services that are far more specialized than those provided by primary care physicians.

Education and Training

As with primary care and surgical specialties, each indicated medical specialty is regulated by a specialty board that sets standards for specialty and subspecialty certification. The typical prerequisites to specialty certification include completion of medical school through an ACGME-accredited program, clinical base training in general medicine for some predetermined duration, valid medical licensure, and completion of a board-approved residency program. Subspecialty certification requirements vary, but typically include primary certification within the corresponding board, as well as completion of additional training through an approved fellowship.

Specialties

The specialty areas that fall within this category include allergy and immunology, anesthesiology, dermatology, emergency medicine, medical genetics, neurology, nuclear medicine, pathology, physical medicine and rehabilitation, preventive medicine, psychiatry, and radiology (review Table 7-3).

INDUSTRY TRENDS

Characteristics and Distribution

In 2013, the total number of primary care subspecialists and physicians practicing in one of these medical specialty areas was approximately 534,817, representing over 50% of the physician

337 "American Board of Urology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-urology/ (Accessed 4/10/15).

population.[338] Not including the primary care subspecialties, medical specialties accounted for 42.5% of the total physician population in 2013, with 444,670 physicians across all specialty and subspecialty areas.[339] Of these medical specialists, approximately 94.7% (421,158 specialists) reported their major professional activity to be patient care, with 304,394 working in an office-based setting and 116,764 working in a hospital-based setting.[340]

Of all medical specialists, 64,544 (14.5%) were over the age of 65, and 169,934 (38.2%) were over the age of 55.[341] However, the overall trend seems to suggest that enough interest exists in this subset of medicine to, at least, offset the retiring population with incoming specialty fellows (71,073, or 15.9%, of all medical specialists were under the age of 35, and 169,195, or 38.0%, were under the age of 45).[342] Approximately 55.3%, or 64,606, of specialists employed by hospitals were residents.[343] As such, the 64,606 residents reported in 2013 slightly exceeded the number of physicians employed as hospital staff (52,158).[344]

With 112,733 female medical specialists, absent of primary care subspecialists, women comprised 25.3% of this physician sector in 2013.[345] There were 107,216 women providing medical specialty services in patient care, with 69,756 of them being office based and 37,460 being hospital based.[346] More than 64% of these hospital-based female specialists were residents or fellows.[347] Only 7,254 of all women practicing in the medical specialties were over the age of 65, which pales in comparison to the 27,471 female specialists under the age of 35 and the 58,101 female specialists under the age of 45.[348]

Supply and Demand

Supply and demand for medical specialists have both been strong over the last several years. Demand has steadily increased, largely due to the aging population and the increasing prevalence of many chronic diseases.[349] As a result of this strong demand, wages for medical specialist physicians have risen, which in turn attracts medical students away from primary care, thus guaranteeing the supply of medical sub-specialists.[350] As of 2014, only one in five medical students elected to pursue a career in primary care.[351]

Despite the preference of medical students for medical sub-specialization, the United States is still projected to face a shortage of 5,100 to 12,300 medical specialty physicians by 2025.[352] Over the course of the next decade, demand for medical specialty physicians is projected to grow

338 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 289.
339 Ibid.
340 Ibid.
341 Ibid, p. 290.
342 "Physician Characteristics and Distribution in the US" 2015 Edition, American Medical Association: Chicago, IL, 2015, p. 290.
343 Ibid, p. 289.
344 Ibid, p. 289.
345 Ibid, p. 289.
346 Ibid, p. 289.
347 Ibid, p. 289.
348 Ibid, p. 290.
349 "IBISWorld Industry Report 62111b: Specialist Doctors in the US" By Sally Lerman, IBISWorld, October 2014, p. 5.
350 Ibid.
351 Ibid.
352 "The Complexities of Physician Supply and Demand: Projections from 2013 to 2025" IHS Inc., Report for the Association of American Medical Colleges, March 2015, https://www.aamc.org/download/426242/data/ihsreportdownload.pdf?cm_mmc=AAMC-_-ScientificAffairs-_-PDF-_-ihsreport (Accessed 3/9/15), p. 29, 41.

rapidly.[353] However, across all non-primary care specialties, the HRSA has projected the supply of physicians to remain stable relative to the population, growing only 0.4% between 2010 and 2025,[354] resulting in a projected shortage of medical specialists.

HIGHLIGHTS IN THE FOUR PILLARS

Competition

One of the major sources of competition for medical specialists is internal competition for residency positions. As noted previously, in 2015, 25% of applicants to fellowship programs were not matched,[355] preventing them from pursuing specialty certification. Among those physicians who are already established as medical specialists, competition may be altered by the size or location of the physician's practice. For example, specialty physicians are often concentrated near population centers,[356] and as such, competition for market share may be more intense in urban areas. Additionally, many medical specialists have consolidated their practices in recent years, forming larger group practices that have a competitive advantage for the purpose of negotiating contracts with hospitals, suppliers, and managed care payors.[357]

ALLERGY AND IMMUNOLOGY

Description and Scope

Scope

Allergists and immunologists receive training in evaluating, diagnosing, and managing immune system disorders.[358] They are specialized in caring for patients who suffer from problems with their immune systems, namely, adverse responses to otherwise nontoxic substances (for example, foods, drugs, chemicals, stings, or pollens) or allergic conditions (for example, hay fever, asthma, hives, dermatitis, and eczema).[359]

Education and Training

In order to receive certification from the American Board of Allergy and Immunology (ABAI), applicants must have achieved either ABIM or ABP certification (see *Education and Training* under *Internal Medicine and Pediatrics*), and then they must complete an accredited residency

353 Ibid, p. 29.
354 "Projecting the Supply of Non-Primary Care Specialty and Subspecialty Clinicians: 2010-2025" Health Resources and Services Administration, July 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/clinicalspecialties/clinicalspecialties.pdf (Accessed 4/8/15), p. 5.
355 "Results and Data: Specialties Matching Service, 2015 Appointment Year" National Resident Matching Program, February 2015, http://www.nrmp.org/wp-content/uploads/2015/02/Results-and-Data-SMS-2015.pdf (Accessed 4/8/15), p. 6-7.
356 "IBISWorld Industry Report 62111b: Specialist Doctors in the US" By Sally Lerman, IBISWorld, October 2014, p. 24.
357 Ibid, p. 5, 24.
358 "About Physician Specialties: Allergy and Immunology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/allergy.aspx (Accessed 10/08/09).
359 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 1.

program in allergy and immunology.[360] Allergy and immunology residencies last two years, and prepare residents to "serve as consultants, educators, and physician scientists in asthma, allergic disorders, immunologic disorders, and immunodeficiency diseases."[361] Furthermore, in order to complete the program, residents must demonstrate competence in assessing the risks and benefits associated with certain allergen, drug, and immunomodulatory therapies, as well as executing and evaluating the results of said therapies.[362] Although the ABAI does not offer advanced training for those seeking sub-specialization, dual certification programs are available in allergy and immunology and pediatric pulmonology, adult rheumatology, and pediatric rheumatology.[363]

Specialties

Subspecialty certification in allergy and immunology is not offered. However, as previously mentioned, three particular certification programs are offered for those who wish to pursue dual enrollment.[364]

ANESTHESIOLOGY

Description and Scope

Scope

Anesthesiologists are trained in pain relief and management and must demonstrate the ability to restore the stability of patients who have just undergone surgical, obstetric, or diagnostic procedures.[365] It is an anesthesiologist's responsibility to evaluate a patient's risk prior to surgery and to manage the patient's condition through to the surgery's completion. Additionally, anesthesiologists diagnose and treat cancer pain problems, critical illnesses, and severe injuries. Also, they are trained in cardiac and respiratory emergency resuscitation by way of artificial ventilation. Finally, they are responsible for managing post-anesthesia recovery.[366]

Education and Training

In order to qualify for primary certification through the American Board of Anesthesiology (ABA), physicians pursuing specialization in anesthesiology must complete a four-year anesthesiology residency program.[367] Anesthesia residency programs are divided into two sections: the *clinical base year*, in which the resident receives twelve months of broad based

360 "American Board of Allergy and Immunology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-allergy-and-immunology/ (Accessed 4/9/15).
361 "ACGME Program Requirements for Graduate Medical Education in Allergy and Immunology" Accreditation Council for Graduate Medical Education, June 9, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/020_allergy_immunology_07012014.pdf (Accessed 4/9/15), p. 1.
362 Ibid, p. 9-10.
363 "American Board of Allergy and Immunology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-allergy-and-immunology/ (Accessed 4/9/15).
364 "About Physician Specialties: Allergy and Immunology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/allergy.aspx (Accessed 10/08/09).
365 "About Physician Specialties: Anesthesiology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/anesthesiology.aspx (Accessed 10/08/09).
366 Ibid.
367 Ibid.

education regarding various medical disciplines that are relevant to anesthesiology, and *clinical anesthesia training,* in which the resident receives training in peri-operative care.[368] Anesthesiology residents must be able to demonstrate competence in anesthetic management of different types of patients (e.g. children or critically-ill patients), as well as anesthetic care of patients undergoing a variety of procedures (e.g. cesarean sections or cardiac surgery).[369] Once they have been certified by the ABA, physicians may seek advanced training in various anesthetic sub-specialties, detailed below.[370]

Specialties

Anesthesiologists may subspecialize in critical care medicine, hospice and palliative medicine, pain medicine, pediatric anesthesiology, or sleep medicine;[371] see Table 7-14 for more details.

368 "ACGME Program Requirements for Graduate Medical Education in Anesthesiology" Accreditation Council for Graduate Medical Education, September 29, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/040_anesthesiology_07012014.pdf (Accessed 4/9/15), p. 1-4.

369 Ibid, p. 15-17.

370 "American Board of Anesthesiology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-anesthesiology/ (Accessed 4/9/15).

371 Ibid.

Table 7-14: Anesthesiology Subspecialty Certification offered by the ABA

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anesthesiology	Critical Care Medicine	An Anesthesiologist who specializes in Critical Care Medicine diagnoses and treats patients with critical illnesses or injuries, particularly trauma victims and patients with multiple organ dysfunction who require care over a period of hours, days, or weeks. These physicians also coordinate patient care among the primary physician, critical care staff, and other specialists and their primary base of operation is the intensive care unit (ICU) of a hospital.	ABA primary certification, plus licensure, plus twelve months of accredited fellowship training in subspecialty area	(4)	859	560	262	43.0	99291, 99233, 99232, 99214, 99213, 99223, 99292, 94729, J2357, G8553
	Hospice and Palliative Medicine	An Anesthesiologist who specializes in Hospice and Palliative Medicine provides care to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family.	ABA primary certification, plus licensure, plus twelve months of accredited fellowship training in subspecialty area	(5)	3	3	0	63.3	99233, 99232, 99223, 99231, 99222, 99214, 99356, 99213, 99309, 99221
	Pain Medicine	Anesthesiologist who specializes in Pain Medicine provides care for patients with acute, chronic, and/or cancer pain in both inpatient and outpatient settings while coordinating patient care needs with other specialists.	ABA primary certification, plus licensure, plus twelve months of accredited fellowship training in subspecialty area	(6)	1,524	1,359	155	48.0	99213, 99214, J3301, J3010, J0585, 83925, Q9966, 77003, J1100, 64483

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anesthesiology	Pediatric Anesthesiolgy	An Anesthesiologist who specializes in Pediatric Anesthesiology provides anesthesia for neonates, infants, children, and adolescents undergoing surgical, diagnostic, or therapeutic procedures as well as appropriate pre- and post-operative care, advanced life support, and acute pain management.	ABA primary certification, plus licensure, plus twelve months of accredited fellowship training in subspecialty area	(7)	1,433	964	414	39.8	00142, 00810, 00740, 99213, 99214, 36620, J3301, 77003, 62311, 76942
	Sleep Medicine	An Anesthesiologist who specializes in Sleep Medicine has expertise in the diagnosis and management of clinical conditions that occur during sleep, that disturb sleep, or that are affected by disturbances in the wake-sleep cycle. This specialist is skilled in the analysis and interpretation of comprehensive polysomnography, and well versed in emerging research and management of a sleep laboratory.	ABA primary certification, plus licensure, plus participation in ABA's Maintenance of Certification in Anesthesiology program, plus twelve months of accredited fellowship training in subspecialty area	(8)	776	578	163	42.2	00142, 00810, 00740, 99213, 99214, 36620, J3301, 77003, 62311, 76942

Notes:

1 "American Board of Anesthesiology" American Board of Medical Specialties, 2015, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-anesthesiology/ (Accessed 4/10/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "ACGME Program Requirements for Graduate Medical Education in Anesthesiology Critical Care Medicine" Accreditation Council for Graduate Medical Education, 2014, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/045_critical_care_anes_07012014_1-YR.pdf (Accessed 4/10/15).

5 "ACGME Program Requirements for Graduate Medical Education in Hospice and Palliative Medicine" Accreditation Council for Graduate Medical Education, 2015, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/540_hospice_and_palliative_medicine_07012014_1-YR.pdf (Accessed 4/10/15).

6 "ACGME Program Requirements for Graduate Medical Education in Pain Medicine" Accreditation Council for Graduate Medical Education, 2015, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/530_pain_medicine_07012014_1-YR.pdf (Accessed 4/10/15).

7 "ACGME Program Requirements for Graduate Medical Education in Pediatric Anesthesiology" Accreditation Council for Graduate Medical Education, 2014,http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/042_pediatric_anes_07012014_1-YR.pdf (Accessed 4/10/15).

8 "Sleep Medicine Training Information" Society of Anesthesia and Sleep Medicine, 2015, http://sasmhq.org/sleep-medicine-training-information/ (Accessed 4/10/15).

DERMATOLOGY

Description and Scope

Scope

Dermatologists diagnose and treat patients with skin, mouth, external genitalia, hair, and nail disorders and diseases (for example, skin cancer, melanoma, moles, and other tumors of the skin).[372] They are also proficient in the management of allergic and non-allergic skin conditions (for example, dermatitis) and in the diagnosis of systemic and infectious diseases by way of dermal symptoms.[373] Dermatologists receive training in dermatopathology, the ability to monitor and diagnose skin diseases, and dermatological surgery procedures.[374] Finally, they provide services related to dermal cosmetic disorders (for example, hair loss and age-induced scars).[375]

Education and Training

Graduates seeking certification by the American Board of Dermatology (ABD) must first undergo four years of residency training.[376] This training consists of a twelve months of clinical training in one of several primary areas (e.g. family medicine or obstetrics and gynecology), followed by a three-year residency in dermatology.[377] The dermatology residency is more specialized, focusing on diseases of the hair, skin, nails, and mucous membranes, ultimately requiring the resident to be able to perform a variety of dermatological procedures, including: (1) skin biopsies; (2) destruction of tumors; (3) closure of surgical defects; (4) diagnostic procedures; and (5) use and interpretation of photomedicine, phototherapy, and pharmacologic therapies.[378]

Specialties

Dermatologists may seek subspecialty certification in dermatopathology or pediatric dermatology. See Table 7-15 for descriptions and more information about these subspecialty areas.[379]

372 "About Physician Specialties: Dermatology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/dermatology.aspx (Accessed 10/08/09).
373 Ibid.
374 Ibid.
375 Ibid.
376 "American Board of Dermatology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-dermatology/ (Accessed 4/9/15).
377 "Requirements for Eligibility to Take the Examination" The American Board of Dermatology, Inc., http://www.abderm.org/residency/residency.html (Accessed 4/9/15).
378 "ACGME Program Requirements for Graduate Medical Education in Dermatology" Accreditation Council for Graduate Medical Education, June 15, 2014, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/080_dermatology_07012014_u06152014.pdf (Accessed 4/9/15), p. 1, 9-10.
379 "About Physician Specialties: Dermatology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/dermatology.aspx (Accessed 10/08/09).

Table 7-15: Dermatology Subspecialty Certification offered by the ABD

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Dermatology	Dermatopathology*	"diagnosing and monitoring diseases of the skin, including infectious, immunologic, degenerative, and neoplastic diseases. This entails the examination and interpretation of specially prepared tissue sections, cellular scrapings and smears of skin lesions by means of light microscopy, electron microscopy, and fluorescence microscopy."	Licensure, plus (ABD *and* American Board of Pathology primary certification) *or* (ABD primary certification, plus one year of accredited fellowship training in dermatopathology)	(4)	810	589	138	45.5	17003, 99213, 17000, 88305, 11100, 99212, 17110, 11101, 99214, G8553
	Pediatric Dermatology	"A Pediatric Dermatologist treats specific skin disease categories with emphasis on those diseases which predominate in infants, children, and adolescents."	ABD primary certification, plus licensure, plus a one-year accredited fellowship program in pediatric dermatology	(5)	18	16	1	46.6	17003, 99213, 17000, 88305, 11100, 99212, 17110, 11101, 99214, G8553

Notes:

1 "American Board of Dermatology" American Board of Medical Specialties, 2015, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-anesthesiology/ (Accessed 4/10/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Subspecialty Certification in Dermatopathology" American Board of Dermatology, 2015, http://www.http://www.abderm.org/subspecialties/derm.html (Accessed 4/13/2015).

5 "Subspecialty Certification in Pediatric Dermatology" American Board of Dermatology, 2015, http://www.http://www.abderm.org/subspecialties/derm.html (Accessed 4/13/2015).

EMERGENCY MEDICINE

Description and Scope

Scope

Emergency physicians are experienced in immediately and accurately recognizing, evaluating, treating, and stabilizing victims of acute illness or injury.[380] They are proficient in quick decision-making and action because they are relied upon to prevent disability in both pre-hospital and emergency room settings.[381]

Education and Training

In order to become certified by the American Board of Emergency Medicine (ABEM), physicians must first complete a minimum of three years of specialized residency training, although four-year emergency medicine residency programs are available.[382] Residencies in emergency medicine are designed to teach effective management of clinical problems, and train residents to synthesize critical data, generate differential diagnoses, and perform diagnostic procedures, therapeutic procedures, and emergency stabilization.[383] Once the residency in emergency medicine has been completed, physicians may seek advanced training through the ABEM in one of several sub-specialties.[384]

Specialties

Physicians may choose to pursue subspecialty certificates in emergency medicine, which include hospice and palliative medicine, medical toxicology, pediatric emergency medicine, sports medicine, and undersea and hyperbaric medicine. Details about these subspecialty areas are included in Table 7-16.

380 "About Physician Specialties: Emergency Medicine" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/emergency.aspx (Accessed 10/08/09).
381 Ibid.
382 "ACGME Program Requirements for Graduate Medical Education in Emergency Medicine" Accreditation Council for Graduate Medical Education, September 30, 2012, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/110_emergency_medicine_07012013.pdf (Accessed 4/9/15), p. 1.
383 Ibid, p. 12-14.
384 "American Board of Emergency Medicine" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-emergency-medicine/ (Accessed 4/9/15).

Table 7-16: Emergency Medicine Subspecialty Certification offered by ABEM

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Emergency Medicine	Hospice and Palliative Medicine	"An Emergency Medicine physician specializing in Hospice and Palliative Medicine has special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family."	ABEM primary certification, plus licensure, plus completion of a Hospice and Palliative Medicine fellowship program.	(4)	1	1	0	57.0	99285, 99284, 93010, 99283, 99291, G8784, 99213, 99214, J0878, 93042
	Medical Toxicology	"specialize in the prevention, evaluation, treatment, and monitoring of injury and illness from exposures to drugs and chemicals, as well as biological and radiological agents."	ABEM primary certification, plus licensure, plus completion of an accredited fellowship program in medical toxicology	(5)	190	110	68	39.4	99285, 99284, 93010, 99283, 99291, G8784, 99213, 99214, J0878, 93042
	Pediatric Emergency Medicine	"An Emergency Medicine physician who specializes in Pediatric Emergency Medicine has special qualifications to manage emergency treatments in acutely ill or injured infants and children."	ABEM primary certification, plus licensure, plus completion of a pediatric emergency medicine fellowship program	(6)	61	21	39	34.3	99285, 99284, 93010, 99283, 99291, G8784, 99213, 99214, J0878, 93042
	Sports Medicine	"specializes in preventing, diagnosing, and treating injuries related to participating in sports and/or exercise. In addition to the study of those fields that focus on prevention, diagnosis, treatment, and management of injuries, sports medicine also deals with illnesses and diseases that might have effects on health and physical performance."	ABEM primary certification, plus licensure, plus completion of a sports medicine fellowship program	(7)	49	38	10	40.7	99285, 99284, 93010, 99283, 99291, G8784, 99213, 99214, J0878, 93042

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Emergency Medicine	Undersea and Hyperbaric Medicine	"treats decompression illness and diving accident cases and uses hyperbaric oxygen therapy to treat such conditions as carbon monoxide poisoning, gas gangrene, non-healing wounds, tissue damage from radiation and burns, and bone infections. This specialist also serves as consultant to other physicians in all aspects of hyperbaric chamber operations, and assesses risks and applies appropriate standards to prevent disease and disability in divers and other persons working in altered atmospheric conditions."	ABEM primary certification, plus licensure, plus (fellowship training through an accredited undersea and hyperbaric medicine residency program) *or* (completion of basic undersea and hyperbaric medicine *and* two years of experience during which 25% of work was in undersea and hyperbaric medicine)	(8)	25	17	8	48.3	99285, 99284, 93010, 99283, 99291, G8784, 99213, 99214, J0878, 93042

Notes:

1 "American Board of Emergency Medicine" American Board of Medical Specialties, 2015, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-emergency-medicine/ (Accessed 4/10/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Hospice and Palliative Medicine Eligibility Criteria for Certification and Recertification"
American Board of Emergency Medicine, 2015, http://www.abem.org/public/docs/default-source/eligibility-documents/eligibility-criteria-2013-hpm-final.pdf?Status=Temp&sfvrsn=2 (Accessed 4/13/2015).

5 "Medical Toxicology Eligibility Criteria for Certification"
American Board of Emergency Medicine, 2015, https://www.abem.org/public/docs/default-source/eligibility-documents/medical-toxicology---eligibility-criteria---certification-2008-rev-2009.pdf?Status=Temp&sfvrsn=6 (Accessed 4/13/2015).

6 "Pediatric Medicine Eligibility Criteria for Certification and Recertification"
American Board of Emergency Medicine, 2015, http://sfstage.abem.org/public/docs/default-source/eligibility-documents/pediatric-emergency-medicine-eligibility-criteria---certification---2006-rev-2008.pdf?Status=Temp&sfvrsn=6 (Accessed 4/13/2015).

7 "Sports Medicine Eligibility Criteria for Certification"
American Board of Emergency Medicine, 2015, https://www.abem.org/public/docs/default-source/eligibility-documents/sports-medicine-eligibility-criteria---certification---2014.pdf?sfvrsn=10 (Accessed 4/13/2015).

8 "Undersea and Hyperbaric Medicine Eligibility Criteria for Certification and Recertification"
American Board of Emergency Medicine, 2015, https://www.abem.org/public/docs/default-source/eligibility-documents/undersea-and-hyperbaric-medicine---eligibility-criteria---2012.pdf?sfvrsn=14 (Accessed 4/13/2015).

MEDICAL GENETICS

Description and Scope

Scope

Medical geneticists provide diagnostic and therapeutic care to patients suffering from genetically linked diseases and disorders.[385] These specialists implement *"cytogenetic, radiological, and biochemical testing"* methods to help with genetic counseling, therapies, and prevention by way of prenatal diagnosis.[386] Specialists in this area often coordinate and execute screening programs to detect metabolic errors, hemoglobinopathies, chromosomal defects, and neural tube defects.[387]

Education and Training

In order to be certified as a clinical geneticist by the American Board of Medical Genetics and Genomics (ABMGG), a physician must first complete three to four years of residency training. This training must consist of either: (1) a year in primary care residency as well as two years in a genetics residency or (2) a four-year combined residency program in pediatrics and genetics, internal medicine and genetics, or maternal-fetal medicine and genetics.[388] Residency programs in medical genetics focus on diagnosis, management, treatment, and risk assessment of patients who have or are at risk of having genetic disorders.[389]

Notably, the ABMGG offers certification in Clinical Biochemical Genetics, Clinical Cytogenetics, and Clinical Molecular Genetics *without* the completion of a residency program.[390] However, the ABMGG notes that these specialists are suited to act as consultants regarding laboratory diagnosis, as opposed to clinical geneticists, who may provide diagnostic, management, therapeutic, and counseling services.[391]

Specialties

Of the four specialty areas in medical genetics, only *one* is limited to physicians: clinical genetics.[392] Physicians and doctoral candidates of genetics or a related field within the biological sciences may participate in the other three areas: clinical biochemical genetics, clinical cytogenetics, and clinical molecular genetics.[393] See Table 7-17 for more information.

The two subspecialty areas of medical genetics are medical biochemical genetics and molecular genetic pathology.[394] See Table 7-17 for educational requirements.

385 "About Physician Specialties: Medical Genetics" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/medical.aspx (Accessed 10/08/09).
386 Ibid.
387 Ibid.
388 "Specialties of Genetics" American Board of Medical Genetics and Genomics, November 18, 2014, http://www.abmgg.org/pages/training_specialties.shtml (Accessed 4/9/15).
389 "ACGME Program Requirements for Graduate Medical Education in Medical Genetics" Accreditation Council on Graduate Medical Education, February 4, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/130_medical_genetics_07012014.pdf (Accessed 4/9/15), p. 1.
390 "Specialties of Genetics" American Board of Medical Genetics and Genomics, November 18, 2014, http://www.abmgg.org/pages/training_specialties.shtml (Accessed 4/9/15).
391 Ibid.
392 "Training Options" American Board of Medical Genetics, October 1, 2008, http://www.abmg.org/pages/training_options.shtml (Accessed 10/8/09).
393 Ibid.
394 "Training Options" American Board of Medical Genetics, October 1, 2008, http://www.abmg.org/pages/training_options.shtml (Accessed 10/8/09).

Table 7-17: Medical Genetics Subspecialty Certification offered by ABMGG

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Clinical Biochemical Genetics		"A Clinical Biochemical Geneticist demonstrates competence in performing and interpreting a wide range of specialized, laboratory biochemical analyses relevant to the diagnosis and management of inherited metabolic disorders. The specialist acts as a consultant regarding laboratory diagnosis on a broad range of biochemical genetic disorders."	M.D. or Ph.D.	(4)	18	6	5	55.7	N/A
Clinical Cytogenetics		"A Clinical Cytogeneticist demonstrates competence in performing and interpreting laboratory diagnostic tests involving the relationship between the structure and number of chromosomes associated with inherited and acquired disorders, including cancer. This specialist is a consultant regarding laboratory diagnosis of this broad range of disorders"	M.D. or Ph.D.	(4)	9	3	1	58.1	N/A
Clinical Genetics		"A Clinical Geneticist demonstrates competence in providing comprehensive diagnostic, treatment, management, and counseling services for individuals and families at risk for clinical disorders with a genetic basis. The specialist is trained to evaluate individuals of all ages who are at risk for hereditary conditions."	Two years at an ACGME-accredited residency program (any specialty), plus licensure, plus a two-year clinical genetics residency accredited by the American Board of Medical Genetics (ABMG)	(5)	117	54	37	59.8	N/A

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Clinical Molecular Genetics		Proficiency in the use of molecular analyses in the diagnosis and management of genetic diseases and disorders	M.D. or Ph.D.	(5)	10	1	0	51.0	N/A
	Medical Biochemical Genetics	"A Medical Biochemical Geneticist demonstrates competence in the diagnosis, medical treatment, and management of individuals with inherited metabolic conditions presenting clinically from infancy through adulthood, including via newborn screening. The subspecialist provides direct care and consultative care for individuals of all ages who are diagnosed with inborn errors of metabolism."	ABMG primary certification, plus licensure, plus one year of subspecialty fellowship training, plus a logbook of 150 cases or ABMS primary certification, licensure, 1-year subspecialty fellowship training, plus a logbook of 150 cases, plus additional education requirements	(5)	3	1	0	53.7	N/A
	Molecular Genetic Pathology	"A Molecular Genetic Pathologist is an expert in the principles, theory, and technologies of molecular biology and molecular genetics. This expertise is used to make or confirm diagnoses of Mendelian genetic disorders, of human development, infectious diseases, and malignancies and to assess the natural history of those disorders."	Certification by the ABP (anatomic pathology, clinical pathology, or combined anatomic pathology and clinical pathology) or the ABMGG (clinical genetics only), and have completed at least 1 year of training in molecular genetic pathology in a program accredited for such training by the ACGME.	(5)	14	3	9	38.4	N/A

Notes:

1 "American Board of Medical Genetics and Genomics" American Board of Medical Specialties, 2015, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-medical-genetics-and-genomics/ (Accessed 4/13/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Specialties of Genetics"
American Board of Medical Genetics and Genomics, 2015, http://www.abmgg.org/pages/training_specialties.shtml (Accessed 4/13/2015).

5 "Subspecialties of Genetics"
American Board of Medical Genetics and Genomics, 2015, http://www.abmgg.org/pages/training_subspecialties.shtml (Accessed 4/13/2015).

NEUROLOGY

Description and Scope

Scope

Neurologists receive specialty training in diagnosing and treating conditions of the brain, spinal cord, peripheral nerves, muscles, autonomic nervous system, and blood vessels (as they relate to other neurological structures).[395] Diagnosis and management, as they relate to this "cerebral specialty," rely heavily on clinical interaction without abandoning certain inherent biological rules and laboratory skills.[396] Again, the scope of service remains within the bounds of the central and peripheral nervous systems, which include the autonomic nervous system and skeletal muscle conditions.[397]

Child neurologists also receive primary certification but possess additional skills in diagnosing and managing neurologic conditions in infants, young children, and adolescents.[398]

Education and Training

Certification as a specialist in neurology, offered by the American Board of Psychiatry and Neurology (ABPN) requires residency training in both primary care and neurology.[399] Physicians seeking certification in neurology alone must complete either: (1) a year of residency in internal medicine as well as three years of residency in neurology; or (2) four years of residency in a neurology residency program that includes broad clinical experience in general internal medicine.[400] Similarly, physicians seeking certification in neurology with special qualification in child neurology must complete all of the following:

(1) One year of residency training in pediatrics;
(2) One year of residency training in internal medicine, one year of research in basic neurosciences, or an additional year of residency training in pediatrics; and
(3) Three years of residency training in a specialized child neurology program.[401]

395 "About Physician Specialties: Neurology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/neurology.aspx (Accessed 10/08/09).
396 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 34.
397 Ibid.
398 "About Physician Specialties: Neurology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/neurology.aspx (Accessed 10/08/09).
399 "American Board of Psychiatry and Neurology: Neurology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-neurology/ (Accessed 4/9/15).
400 "2015 Information for Applicants: Certification Examination in Neurology or Neurology with Special Qualification in Child Neurology" American Board of Psychiatry and Neurology, Inc., 2014, http://www.abpn.com/wp-content/uploads/2015/01/2015_IFA_Cert_N-ChiN1.pdf (Accessed 4/9/15), p. 11; "ACGME Program Requirements for Graduate Medical Education in Neurology" Accreditation Council for Graduate Medical Education, June 9, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/180_neurology_07012014.pdf (Accessed 4/9/15), p. 1.
401 "2015 Information for Applicants: Certification Examination in Neurology or Neurology with Special Qualification in Child Neurology" American Board of Psychiatry and Neurology, Inc., 2014, http://www.abpn.com/wp-content/uploads/2015/01/2015_IFA_Cert_N-ChiN1.pdf (Accessed 4/9/15), p. 12-13.

For both neurology programs and child neurology programs, residents study the diagnosis, management, and treatment of patients with neurological disorders.[402] Subspecialty certification requires additional specialized training. Refer to the following section, *Specialties*, for details about subspecialty options.

Specialties

Two specialty areas exist in which physicians can choose to pursue general certification: neurology and child neurology.[403] Additionally, physicians may pursue seven subspecialty areas after achieving preliminary certification, each of which requires an additional year of training: clinical neurophysiology, hospice and palliative medicine, neurodevelopmental disabilities, neuromuscular medicine, pain medicine, sleep medicine, and vascular neurology.[404] See Table 7-18 for more information.

402 "ACGME Program Requirements for Graduate Medical Education in Neurology" Accreditation Council for Graduate Medical Education, June 9, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/180_neurology_07012014.pdf (Accessed 4/9/15), p. 10-11; "ACGME Program Requirements for Graduate Medical Education in Child Neurology" Accreditation Council for Graduate Medical Education, September 29, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/185_child_neurology_07012014.pdf (Accessed 4/9/15), p. 10-11

403 "About Physician Specialties: Neurology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/neurology.aspx (Accessed 10/08/09).

404 Ibid.

Table 7-18: Neurology Subspecialty Certification offered by ABPN

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Neurology or Child Neurology	Brain Injury Medicine	"Brain Injury Medicine is a subspecialty focused on the prevention, evaluation, treatment, and rehabilitation of individuals with acquired brain injury. These physicians provide a high level of care for patients with brain injury and their families in hospital and post-acute settings, and over the continuum of care to facilitate the process of recovery and improve medical and functional outcomes"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(12)	1,459	1,092	331	40.1	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223
	Clinical Neurophysiology	"A Psychiatrist, Neurologist, or Child Neurologist who specializes in Clinical Neurophysiology focuses on the evaluation and treatment of central, peripheral, and autonomic nervous system disorders using a combination of clinical evaluation and electrophysiologic testing such as electroencephalography (EEG), electromyography (EMG), and nerve conduction studies (NCS), among others"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(11)	1,459	1,092	331	40.1	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223
	Epilepsy	"A Neurologist or Child Neurologist who specializes in Epilepsy focuses on the evaluation and treatment of adults and children with recurrent seizure activity and seizure disorders. Specialists in Epilepsy (Epileptologists) possess specialized knowledge in the science, clinical evaluation, and management of these disorders"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training or one year of fellowship training in a non-ACGME accredited epilepsy program affiliated with an ACGME accredited neurology or child neurology residency training program	(10)	7	6	1	44.6	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Neurology or Child Neurology	Hospice and Palliative Medicine*	"These physicians have special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(9)	1	1	0	64.0	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223
	Neuro-developmental Disabilities	"A Child Neurologist or Pediatrician who specializes in Neurodevelopmental Disabilities focuses on the evaluation and treatment of chronic conditions that affect the developing and mature nervous system such as cerebral palsy, mental retardation, and chronic behavioral syndromes or neurologic conditions"	ABPN primary certification, plus licensure, plus two years of general pediatric fellowship training, plus two years of combined fellowship training in neurology and neurodevelopmental disabilities	(8)	38	14	21	39.9	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223
	Neuromuscular Medicine	"A Neurologist, Child Neurologist, or Physiatrist who focuses on the evaluation and treatment of disorders of nerve, muscle, or neuromuscular junction, including amyotrophic lateral sclerosis (ALS), peripheral neuropathies (e.g., diabetic), various muscular dystrophies, congenital and acquired myopathies, inflammatory myopathies (e.g. ,polymyositis), and neuromuscular transmission disorders (e.g., myasthenia gravis)"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(7)	167	87	66	36.8	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223
	Pain Medicine	"A Neurologist or Child Neurologist who specializes in Pain Medicine diagnoses and treats patients experiencing problems with acute, chronic, and/or cancer pain in both hospital and outpatient settings and coordinates patient care needs with other specialists"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(6)	7	5	2	51.1	99213, 99214, J3301, J3010, J0585, 83925, Q9966, 77003, J1100, 64483

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Neurology or Child Neurology	Sleep Medicine	"A Neurologist or Child Neurologist with demonstrated expertise in the diagnosis and management of clinical conditions that occur during sleep, that disturb sleep, or that are affected by disturbances in the wake-sleep cycle. This specialist is skilled in the analysis and interpretation of comprehensive polysomnography, and well versed in emerging research and management of a sleep laboratory"	ABPN primary certification, plus licensure, plus one year of ACGME-accredited sleep medicine fellowship training	(4)	17	13	3	51.3	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223
	Vascular Neurology	"A Neurologist or Child Neurologist who focuses on the evaluation and treatment of vascular events affecting the brain or spinal cord, such as ischemic stroke, intracranial hemorrhage, spinal cord ischemia, and spinal cord hemorrhage"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(5)	331	188	123	36.4	J0585, J2323, 99214, 99213, 99232, J0588, G8553, 99215, 95886, 99223

Notes:

1 "American Board of Psychiatry and Neurology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-neurology/ (Accessed 4/13/2015).

2 "American Board of Pathology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-pathology/ (Accessed 4/13/2015).

3 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

4 "Sleep Medicine" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/sleep-medicine/ (Accessed 4/13/2015).

5 "Vascular Neurology" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/vascular-neurology/ (Accessed 4/13/2015).

6 "Pain Medicine" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/pain-medicine/ (Accessed 4/13/2015).

7 "Neuromuscular Medicine" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/neuromuscular-medicine/ (Accessed 4/13/2015).

8 "Neurodevelpomental Disabilities" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/neurodevelopmental-disabilities/ (Accessed 4/13/2015).

9 "Hospice and Palliative Medicine" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/hospice-and-palliative-medicine/ (Accessed 4/13/2015).

10 "Epilepsy" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/epilepsy/ (Accessed 4/13/2015).

11 "Clinical Neurophysiology" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/clinical-neurophysiology/ (Accessed 4/13/2015).

12 "Brain Injury Medicine" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/brain-injury-medicine/ (Accessed 4/13/2015).

NUCLEAR MEDICINE

Description and Scope

Scope

Nuclear medicine embodies the practice of molecular imaging. This new area of technology allows physicians to evaluate molecular, metabolic, physiologic, and pathologic conditions, diseases, and disorders through utilization of tracers (for example, radiopharmaceuticals).[405] Once tracers are targeted, physicians interpret images according to the functional and structural information they provide.[406]

Most specifically, nuclear medicine allows for early detection, diagnosis, and treatment due to its ability to identify changes in function, usually unnoticeable, which precede the structural changes that typically indicate abnormalities long after they form.[407] Further, nuclear medicine typically involves the joint use of anatomical and molecular imaging, as with the use of positron emission technology-computed tomography (PET-CT) (see Chapter 5 of *An Era of Reform—The Four Pillars*).[408] Most frequent applications of nuclear medicine include coronary artery disease as well as cancer diagnosis, staging, follow-up after treatment, and pain relief (for example, for cancers that have spread to the bone).[409]

The complexity of this specialty area requires ample knowledge of physical and clinical sciences, namely physiologic and anatomic imaging techniques (for example, through the use of radioactive tracers), statistical literacy for the proper analysis of data, and a firm grasp of biology, biochemistry, anatomy, and physiology.[410]

Education and Training

Residency training for physicians seeking specialty certification in nuclear medicine is governed by the American Board of Nuclear Medicine (ABNM) and is three years in length.[411] These programs train residents to use radiopharmaceuticals in order "to evaluate molecular, metabolic, physiologic, and pathologic conditions of the body for the purposes of diagnosis, therapy, and research."[412] Key competencies that residents in nuclear medicine programs will learn include: (1) patient evaluations; (2) selection, performance, and interpretation of tests and diagnostic

405 "About Physician Specialties: Nuclear Medicine" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/ About_Physician_Specialties/nuclear.aspx (Accessed 10/08/09).
406 Ibid.
407 Ibid.
408 Ibid.
409 Ibid.
410 "Choosing A Medical Specialty" CMSS Interspecialty Cooperation Committee, Lake Forest, IL: Council of Medical Specialty Society, 1990, p. 34.
411 "American Board of Nuclear Medicine" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-nuclear-medicine/ (Accessed 4/9/15).
412 "ACGME Program Requirements for Graduate Medical Education in Nuclear Medicine" Accreditation Council for Graduate Medical Education, September 29, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/200_nuclear_medicine_07012014.pdf (Accessed 4/9/15), p. 1.

procedures; (3) knowledge of radiation safety rules and regulations; and (4) certification in basic and advanced cardiac life support.[413]

Specialties

There are no subspecialty areas in nuclear medicine.

PATHOLOGY

Description and Scope

Scope

Pathologists possess knowledge of disease form and functionality; their biologic, chemical, and physical science training allows them to apply expertise to the diagnosis, management, and treatment of disease.[414] These specialists can be divided into two categories: anatomic and clinical.[415] Anatomic pathology deals with tissues, cells, and other microscopic specimens to procure diagnostic information. Clinical pathology focuses on laboratory test diagnosis.[416] Both specialties require independent board certification, but most practicing physicians are licensed by both boards.[417] In addition, pathologists are trained in many different subspecialties.

Pathologists, like other traditionally hospital-based physicians, such as anesthesiologists and radiologists, are dependent on other physicians for referrals and in many respects work to support the physician caring for the patient rather that the patient themselves. Because of this relationship, both pathologists have been called the "doctor's doctor."[418]

Pathologists work in laboratories within hospitals, freestanding laboratories, outpatient clinics, surgery centers, and other locations.[419]

Laboratory testing generally is categorized as either clinical testing, which is performed on bodily fluids including blood and urine, or anatomical pathology testing, which is performed on tissue. These services may be organized into the following subsections listed in Table 7-19.[420]

413 Ibid, p. 11-14.
414 "American Board of Pathology" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/pathology.aspx (Accessed 4/9/15).
415 Ibid.
416 "Pathology-Anatomic and Clinical" American Association of Medical Colleges, https://www.aamc.org/cim/specialty/list/us/336858/pathology-anatomic_and_clinical.html (Accessed 4/13/15).
417 "American Board of Pathology" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/pathology.aspx (Accessed 4/9/15).
418 "The Physicians: Why is the Pathologist the Doctor's Doctor?" The Doctor's Doctor, November 19, 2006, www.thedoctorsdoctor.com/pathologists.html (Accessed 10/23/09).
419 "Who is the Pathologist" The Doctor's Doctor, November 29, 2006, http://www.thedoctorsdoctor.com/pathologists/who_is_the_pathologist.htm (Accessed 11/6/09).
420 "Hospital Departmental Profiles" American Hospital Association, Third Edition, Chicago, IL: American Hospital Publishing, Inc., 1990, p. 97-98.

Table 7-19: Pathology Laboratory Services

Term	Brief Definition
Anatomic pathology	"[P]rocessing of tissue removed during surgery or autopsy for both gross and microscopic examination" (for example, a liver biopsy may be performed and sent to a pathologist to determine if abnormalities exist within the tissue).
Cytology	"[P]rocessing various specimens (body fluids, smears, and so forth) for microscopic examination to check for abnormalities in cell structure such as malignant cells" (for example, a PAP smear).
Chemistry	Analysis of "serum and other body fluids for a variety of biochemical constituents, such as electrolytes, glucose, protein, enzymes, hormones, and drug levels."
Serology/immunology	Testing of "various body fluids for detection of antigens or antibodies. Common tests look for signs of rubella...hepatitis," and HIV infection.
Hematology	Analysis of "the cellular elements of blood, such as the number, type, and morphology of red cells, white cells, and platelets."
Blood bank	"[S]tores and distributes blood and blood components...Activities include identification of blood type and Rh factor and cross-matching" (for example compatibility testing necessary for transplantation). "Responsibilities also may include donor recruitment and procurement of the actual blood supply."
Microbiology	"[P]rocessing of specimens for the isolation and identification of the microorganisms that cause infection" (for example, bacteria, fungi, and parasites).
Microscopy	Analysis of "body fluids, especially urine and to a lesser extent joint fluid, semen, and spinal fluid."
Nuclear medicine	Use of "radioisotopes to test patient serum for various biochemical constituents."

Education and Training

The nature of the training required for certification by the American Board of Pathology (ABPath) varies depending on the specialty certification sought. Physicians seeking to specialize into either anatomic pathology or clinical pathology must complete three years of residency training, with two years focused on their chosen specialty and a third year of flexible training, which may be allocated to either anatomic or clinical pathology, or to a specialized subset of pathology.[421] Candidates for certification may alternatively elect to complete a four-year residency program to receive a dual certification, which includes one year of flexible training (as described above) and 18 months each devoted to anatomical and clinical pathology.[422] Pathology residency programs train residents in the performance and interpretation of autopsies, as well as the interpretation of laboratory data as part of treatment decision-making and patient counseling.[423] Those pursuing subspecialty certification must complete additional training depending on their area of interest.[424] Subspecialty educational requirements are denoted in Table 7-20.

421 "Requirements for Primary Certification" American Board of Pathology, http://www.abpath.org/BofIPrimaryCert.htm (Accessed 4/9/15); "ACGME Program Requirements for Graduate Medical Education in Anatomic Pathology and Clinical Pathology" Accreditation Council for Graduate Medical Education, July 1, 2011, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/300_pathology_07012014.pdf (Accessed 4/9/15), p. 2.

422 "Requirements for Primary Certification" American Board of Pathology, http://www.abpath.org/BofIPrimaryCert.htm (Accessed 4/9/15).

423 "ACGME Program Requirements for Graduate Medical Education in Anatomic Pathology and Clinical Pathology" Accreditation Council for Graduate Medical Education, July 1, 2011, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/300_pathology_07012014.pdf (Accessed 4/9/15), p. 10-11.

424 "American Board of Pathology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-pathology/ (Accessed 4/9/15).

Specialties

Subspecialties of pathology include blood banking and transfusion medicine, chemical informatics, cytopathology, dermatopathology, chemical pathology, forensic pathology, hematologic pathology, medical microbiology, molecular genetic pathology, and pediatric pathology.[425] Combined certification programs also are available. For more about subspecialty certification options, see Table 7-20.

425 Ibid.

Table 7-20: Pathology Subspecialty Certification offered by ABPath

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anatomical and Clinical Pathology	Blood Banking or Transfusion Medicine	"A Pathologist who specializes in Blood Banking/ Transfusion Medicine is responsible for the maintenance of an adequate blood supply, blood donor and patient-recipient safety, and appropriate blood utilization. Pre-transfusion compatibility testing and antibody testing assure that blood transfusions, when indicated, are as safe as possible. This specialist directs the preparation and safe use of specially prepared blood components, including red blood cells, white blood cells, platelets and plasma constituents, and marrow or stem cells for transplantation"	(Primary certification by the ABP in AP/CP or CP only, plus licensure, plus one full year of training in an ACGME accredited blood banking/transfusion medicine program) *or* (Diplomates of the American Boards of Anesthesiology, Internal Medicine, Obstetrics/Gynecology, Pediatrics, Surgery, Orthopedic Surgery, Plastic Surgery, Colon and Rectal Surgery, Neurological Surgery, and Thoracic Surgery or any diplomate of an ABMS board who holds a subspecialty certificate in Hematology must complete one full year of training in an ACGME accredited blood banking/transfusion medicine program) *or* (Applicants certified by another ABMS board must complete one full year of training in an ACGME accredited blood banking/transfusion medicine program and have one additional year in blood banking/transfusion medicine)	(4)	589	309	136	52.1	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anatomical and Clinical Pathology	Clinical Informatics	"Physicians who practice Clinical Informatics collaborate with other health care and information technology professionals to analyze, design, implement, and evaluate information and communication systems that enhance individual and population health outcomes, improve patient care, and strengthen the clinician-patient relationship. Clinical Informaticians use their knowledge of patient care combined with their understanding of informatics concepts, methods and tools to: asses information and knowledge needs of health care professionals and patients; characterize, evaluate, and refine clinical processes; develop, implement, and refine clinical decision support systems; and lead or participate in the procurement, customization, development, implementation, management, evaluation, and continuous improvement of clinical information system."	(Primary certification in one of the ABMS member boards, plus licensure, plus complete two-year ACGME-accredited clinical informatics fellowship program) *or* (an applicant may submit documentation of a 36 month period of time in which he or she spent a minimum of 25% of his or her time engaged in the practice of clinical informatics at the subspecialty level) *or* (an applicant may request credit for training in a non-ACGME accredited fellowship program of equal duration to an accredited fellowship)	(4)	1	0	0	63.0	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anatomical and Clinical Pathology	Cytopathology	"A Cytopathologist is an Anatomic Pathologist trained in the diagnosis of human disease by means of the study of cells obtained from body secretions and fluids; by scraping, washing, or sponging the surface of a lesion; or by the aspiration of a tumor mass or body organ with a fine needle. A major aspect of a Cytopathologist's practice is the interpretation of Papanicolaou-stained smears of cells from the female reproductive systems (the "Pap" test). However, the Cytopathologist's expertise is applied to the diagnosis of cells from all systems and areas of the body and in consultation to all medical specialists"	Primary certification by the ABP in AP/CP or AP only, plus licensure, plus complete one year of training in an ACGME accredited cytopathology program	(4)	1,034	691	258	45.2	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165
	Derma-topathology*	"A Dermatopathologist is expert in diagnosing and monitoring diseases of the skin, including infectious, immunologic, degenerative, and neoplastic diseases. This entails the examination and interpretation of specially prepared tissue sections, cellular scrapings, and smears of skin lesions by means of light microscopy, electron microscopy, and fluorescence microscopy."	ABP or ABD certification, plus licensure, plus complete one full year of training in an ACGME accredited dermatopathology fellowship program (apthology applicant must spend portion of training in clinical dermatology)	(4)	810	589	138	45.5	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anatomical and Clinical Pathology	Neuropathology	"A Neuropathologist is an expert in the diagnosis of diseases of the nervous system and skeletal muscles and functions as a consultant primarily to Neurologists and Neurosurgeons. This specialist is knowledgeable in the infirmities of humans as they affect the nervous and neuromuscular systems, be they degenerative, infectious, metabolic, immunologic, neoplastic, vascular, or physical in nature"	(Primary certification by the ABP in AP/CP or AP only, plus licensure, plus complete two full years of training in an ACGME accredited neuropathology program) *or* (applicants who are certified in CP or are certified by another ABMS member board must complete one full year of ACGME accredited training in anatomic pathology, and two full years of ACGME accredited training in neuropathology)	(4)	363	168	84	53.9	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165
	Pathology—Chemical	"A Chemical Pathologist has expertise in the biochemistry of the human body as it applies to the understanding of the cause and progress of disease. This specialist functions as a clinical consultant in the diagnosis and treatment of human disease. Chemical Pathology entails the application of biochemical data to the detection, confirmation, or monitoring of disease"	(Primary certification by the ABP in AP/CP or CP only, plus licensure, plus complete two years of training in anatomic pathology/clinical pathology or clinical pathology, plus complete one full year of training in an ACGME accredited chemical pathology program) *or* (Applicants certified by another ABMS member board must complete one full year of training in an ACGME accredited chemical pathology program and one additional year in chemical pathology)	(4)	28	10	3	58.7	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anatomical and Clinical Pathology	Pathology—Forensic	"A Forensic Pathologist is an expert in investigating and evaluating cases of sudden, unexpected, suspicious, and violent death as well as other specific classes of death defined by law. The Forensic Pathologist serves the public as coroner or medical examiner, or by performing medicolegal autopsies for such officials"	Primary certification by the ABP in AP/CP or AP only, plus licensure, plus complete one full year of training in an ACGME accredited forensic pathology program	(4)	681	383	92	53.1	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165
	Pathology—Hematology	"A Hematopathologist is an expert in diseases that affect blood cells, blood clotting mechanisms, bone marrow, and lymph nodes. This specialist has the knowledge and technical skills essential for the laboratory diagnosis of anemias, leukemias, lymphomas, bleeding disorders, and blood clotting disorders"	(Primary certification by the ABP in AP/CP, AP only or CP only or have a primary certificate plus a subspecialty certificate in hematology from another ABMS member board, plus licensure, plus complete one full year of additional training in an ACGME accredited hematology [pathology] program) *or* (applicants certified by another ABMS member board must complete two years of full-time training including one year in an ACGME accredited hematology [pathology] program and one additional year in hematology acceptable to the ABP)	(4)	926	597	253	44.8	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Anatomical and Clinical Pathology	Pathology—Medical Microbiology	"A Medical Microbologist is an expert in the isolation and identification of microbial agents that causes infectious disease. Viruses, bacteria, and fungi, as well as parasites are identified and, where possible, tested for susceptibility to appropriate antimicrobial agents"	(Primary certification by the ABP in AP/CP, AP only or CP only or have a primary certificate plus a subspecialty certificate in infectious disease from another ABMS member board, plus licensure, plus complete one full year of additional training in an ACGME accredited medical microbiology program) *or* (applicants certified by another ABMS member board must complete two years of full-time training including one year in an ACGME approved medical microbiology program and one additional year in medical microbiology acceptable to the ABP)	(4)	85	33	26	49.0	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
Anatomical and Clinical Pathology	Pathology—Molecular Genetic	"A Molecular Genetic Pathologist is an expert in the principles, theory, and technologies of molecular biology and molecular genetics. This expertise is used to make or confirm diagnoses of Mendelian genetic disorders, disorders of human development, infectious diseases, and malignancies and to assess the natural history of those disorders. The Molecular Genetic Pathologist provides information about gene structure, function, and alteration and applies laboratory techniques for diagnosis, treatment, and prognosis for individuals with related disorders"	Primary certification by the ABP (AP/CP, AP only or CP only) or the ABMG, plus licnesure, pluscomplete at least one year of training in an ACGME accredited molecular genetic pathology program	(4)	131	45	57	39.8	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165
	Pathology—Pediatric	"A Pediatric Pathologist is an expert in the laboratory diagnosis of diseases that occur during fetal growth, infancy, and child development. The practice requires a strong foundation in general pathology and substantial understanding of normal growth and development, along with extensive knowledge of pediatric medicine"	Primary certification by the ABP in AP/CP or AP only or in anatomic pathology or general pathology from the RCPSC, plus licensure, plus complete one full year of ACGME accredited training in pediatric pathology	(4)	172	93	60	49.9	88305, 88342, 88313, 88312, 88307, 88304, 88112, 88311, 88331, 84165

Notes:

1 "American Board of Pathology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-pathology/ (Accessed 4/13/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Requirements for Subspecialty Certification" The American Board of Pathology, http://www.abpath.org/BoflSubspecialtyCert.htm (Accessed 4/13/2015).

PHYSICAL MEDICINE AND REHABILITATION

Description and Scope

Scope

Physiatry, also referred to as rehabilitation medicine, involves the evaluation, diagnosis, and treatment of patients with health conditions of the musculoskeletal or neurologic systems.[426] More specifically, physiatrists care for patients suffering from cognitive impairments, painful or limiting disorders, and the co-impairments of diagnostic or therapeutic injection procedures. They also specialize in assisting patients to improve their physical, psychological, social, and vocational function so as to improve their daily lives.[427]

Education and Training

Educational requirements for certification by the American Board of Physical Medicine and Rehabilitation (ABPMR) include completion of twelve months of clinical skills training (six months of which must be allocated to one of several primary care specialties), as well as completion of a three-year accredited program in physical medicine and rehabilitation.[428] Residencies in physical medicine and rehabilitation focus on the diagnosis and management of patients with physical or cognitive disabilities or functional limitations.[429] Those who wish to pursue sub-specialty certification may seek additional training as dictated by the ABPMR.[430]

Specialties

The ABPMR offers subspecialty certification in brain injury medicine, hospice and palliative medicine, neuromuscular medicine, pain medicine, pediatric rehabilitation medicine, spinal cord injury medicine, and sports medicine; details about these subspecialty areas may be found in Table 7-21.[431]

426 "American Board of Physical Medicine and Rehabilitation" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/physical-medicine-and-rehabilitation.aspx (Accessed 4/13/15).
427 Ibid.
428 "ACGME Program Requirements for Graduate Medical Education in Physical Medicine and Rehabilitation" Accreditation Council for Graduate Medical Education, June 9, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/340_physical_medicine_rehabilitation_07012014.pdf (Accessed 4/9/15), p. 13-14.
429 Ibid, p. 1.
430 "American Board of Physical Medicine and Rehabilitation" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-physical-medicine-and-rehabilitation/ (Accessed 4/9/15).
431 "American Board of Physical Medicine and Rehabilitation" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/physical-medicine-and-rehabilitation.aspx (Accessed 4/13/15).

Table 7-21: Physical Medicine and Rehabilitation Subspecialties Certification offered by the ABPMR

Specialties (1)	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Physical Medicine and Rehabilitation (PM&R)	Hospice and Palliative Medicine*	Specialization in the prevention and relief of suffering for patients in hospice or palliative care; involves working within an interdisciplinary team	Certification in PM&R, plus one year of subspecialty training	(4)	1	1	0	51.0	J0585, 99232, 99213, 99214, 99231, 97110, J3301, 99308, 99233, J7325
	Neuromuscular Medicine	"A Physiatrist, Neurologist, or Child Neurologist who focuses on the evaluation and treatment of disorders of nerve, muscle, or neuromuscular junction, including amyotrophic lateral sclerosis (ALS), peripheral neuropathies (e.g. diabetic), various muscular dystrophies, congenital and acquired myopathies, inflammatory myopathies (e.g. polymyositis), and neuromuscular transmission disorders (e.g., myasthenia gravis)"	Certification in PM&R, plus one year of subspecialty training	(4)	5	4	0	60.4	J0585, 99232, 99213, 99214, 99231, 97110, J3301, 99308, 99233, J7325
	Pain Medicine	"A physician who specializes in Pain Medicine diagnoses and treats patients experiencing problems with acute, chronic, and/or cancer pain in both hospital and outpatient settings and coordinates patient care needs with other specialists"	Certification in PM&R, plus one year of subspecialty training	(4)	40	36	2	50.8	J0585, 99232, 99213, 99214, 99231, 97110, J3301, 99308, 99233, J7325
	Pediatric Rehabilitation Medicine	"Pediatric Rehabilitation Medicine is the subspecialty concerned with diagnosis and management of congenital and childhood-onset impairments and disability, such as cerebral palsy, spina bifida, acquired brain or spinal cord injury, amputation, sports injuries, and muscle and nerve diseases"	Certification in PM&R, plus one year of subspecialty training	(4)	53	23	26	40.8	J0585, 99232, 99213, 99214, 99231, 97110, J3301, 99308, 99233, J7325

(continued)

Specialties (1)	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Physical Medicine and Rehabilitation (PM&R)	Spinal Cord Injury Medicine	"Spinal Cord Injury Medicine is the subspecialty concerned with the evaluation and management of patients with spinal cord injuries caused by trauma or from medical conditions."	Certification in PM&R, plus one year of subspecialty training	(4)	124	81	38	41.6	J0585, 99232, 99213, 99214, 99231, 97110, J3301, 99308, 99233, J7325
	Sports Medicine	"A Physiatrist who specializes in preventing, diagnosing, and treating injuries related to participating in sports and/or exercise. In addition to the study of those fields that focus on prevention, diagnosis, treatment, and management of injuries, sports medicine also deals with illnesses and diseases that might have effects on health and physical performance."	Certification in PM&R, plus one year of subspecialty training	(4)	71	38	29	38.4	J0585, 99232, 99213, 99214, 99231, 97110, J3301, 99308, 99233, J7325

Notes:

1 "American Board of Physical Medicine and Rehabilitation" American Board of Medical Specialties, 2015, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-physical-medicine-and-rehabilitation/ (Accessed 4/13/2015).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).

4 "Certification: Booklet of Information, 2015 Examinations"
The American Board of Physical Medicine and Rehabilitation, 2015, https://www.abpmr.org/boi/Cert_BOI.pdf (Accessed 4/13/2015).

PREVENTATIVE MEDICINE

Description and Scope

Scope

Specialists in preventive medicine are trained to provide services that "protect, promote, and maintain" the health of individuals and communities.[432] They are focused especially on preventing adverse health conditions and premature death.[433]

The specific components of preventive medicine include:

(1) Biostatistics;
(2) Epidemiology;
(3) Management and administration of health services;
(4) Environmental health and the control of adverse environmental factors;
(5) Occupational safety and health and the control of adverse occupational factors;
(6) Clinical preventive measures; and
(7) Social, cultural, and behavioral drivers of health trends.[434]

Physicians pursuing primary certification in preventive medicine can specialize in public health, occupational medicine, or aerospace medicine. Additionally, they may choose to pursue several subspecialty areas.[435]

Education and Training

Certification by the American Board of Preventive Medicine (ABPM) requires years of training, consisting of: (1) completion of one year of supervised postgraduate clinical training; (2) completion of graduate level coursework typical of a Master of Public Health program or equivalent master's or doctoral degree (i.e., biostatics, epidemiology, health services management and administration, and environmental health); (3) completion of no less than two years in an accredited residency program targeting the specialty certification being pursued (i.e., Aerospace Medicine, Occupational Medicine, or Public Health and General Preventive Medicine); and (4) one year of full time training or practice in preventive medicine within the preceding three years.[436] Preventive medicine residencies include both broad-based education and specialized education in preventive medicine, which focuses on promotion of health and wellbeing and the prevention of disease in defined populations.[437] Sub-specialty certification

432 "American Board of Preventative Medicine" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/preventive-medicine.aspx (Accessed 4/13/15).
433 Ibid.
434 Ibid.
435 Ibid.
436 "Booklet of Information" American Board of Preventive Medicine, 2015, http://www.theabpm.org/public/infobook.pdf (Accessed 4/9/15), p. 3.
437 "ACGME Program Requirements for Graduate Medical Education in Preventive Medicine" Accreditation Council for Graduate Medical Education, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/380_preventive_medicine_07012014.pdf (Accessed 4/9/15), p. 2-3.

beyond initial certification in aerospace medicine, occupational medicine, or public health and general preventive medicine requires additional training as mandated by the ABPM.[438]

Specialties

In addition to specialty certification in public health, occupational medicine, or aerospace medicine, subspecialties of the various primary certification specialties in preventive medicine include clinical informatics, medical toxicology, and undersea and hyperbaric medicine;[439] all of these subspecialty areas are described further in Table 7-22.

438 "American Board of Preventive Medicine" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-preventive-medicine/ (Accessed 4/9/15).
439 Ibid.

Table 7-22: Preventative Medicine Subspecialties Certification offered by the ABPM

Specialty (2)	Subspecialties (2)	Description		Educational Requirements (4)	Total Physicians (1)	Patient Care (1)		Mean Age of Physicians (1)	Representative Current Procedural Terminology Codes (5)
						Office-Based	Hospital-Based		
Aerospace Medicine		"[F]ocuses on the health of a population group consisting of the operational crews, passengers of air and space vehicles, and the support personnel who are required to operate such vehicles."	(3)	One year of clinical base training, plus Master of Public Health or equivalent master's or doctorate degree, plus licensure, plus 2-year residency program in aerospace medicine	376	99	116	59.3	99213; Q0138; 99214; J9025; J9264; J0885; J0881; J0897; 99183; G0008
Occupational Medicine		"[F]ocuses on the relationships among the health of workers, the arrangements of work, the physical, chemical, and social environments in the workplace, and the health outcomes of environmental exposures"	(3)	One year of clinical base training, plus Master of Public Health or equivalent master's or doctorate degree, plus licensure, plus 2-year residency program in occupational medicine	2,252	1,317	320	60.4	99213; Q0138; 99214; J9025; J9264; J0885; J0881; J0897; 99183; G0008
Public Health and General Preventive Medicine		"[F]ocuses on health promotion and disease prevention in communities and other defined populations"	(3)	One year of clinical base training, plus Master of Public Health or equivalent master's or doctorate degree, plus licensure, plus 2-year residency program in general preventive medicine	1,144	137	62	65.1	99213; Q0138; 99214; J9025; J9264; J0885; J0881; J0897; 99183; G0008
	Clinical Informatics	"[C]ollaborate with other health care and information technology professionals to analyze, design, implement, and evaluate information and communication systems that enhance individual and population health outcomes, improve patient care, and strengthen then clinician-patient relationship."	(2)	Primary certification through the American Board of Medical Specialties (ABMS), plus licensure, plus appropriate criteria for clinical informatics must be met	3	0	0	48.3	99213; Q0138; 99214; J9025; J9264; J0885; J0881; J0897; 99183; G0008
	Medical Toxicology	Specialization in preventing, recognizing, assessing, treating, and monitoring conditions caused by exposure to drugs, chemicals, and other toxins	(2)	Primary certification through the American Board of Preventive Medicine (ABPM), plus licensure, plus appropriate criteria for medical toxicology must be met	29	19	5	46.2	99213; Q0138; 99214; J9025; J9264; J0885; J0881; J0897; 99183; G0008

(continued)

Specialty (2)	Subspecialties (2)	Description		Educational Requirements (4)	Total Physicians (1)	Patient Care (1)		Mean Age of Physicians (1)	Representative Current Procedural Terminology Codes (5)
						Office-Based	Hospital-Based		
Public Health and General Preventive Medicine	Undersea and Hyperbaric Medicine	Specialization in managing cases of "decompression illness and diving accidents…" Utilization of "hyperbaric oxygen therapy to treat carbon monoxide poisoning, gas gangrene, non-healing wounds, tissue damage from radiation and burns, and bone infections."	(2)	Primary certification through ABMS board, plus licensure, plus requirements for undersea hyperbaric medicine	61	42	16	56.6	99213; Q0138; 99214; J9025; J9264; J0885; J0881; J0897; 99183; G0008

Notes:

1 "Physician Characteristics and Distribution in the US: 2015 Edition," By Derek Smart, Chicago, IL: American Medical Association, 2015, p. 15-24.

2 "American Board of Preventive Medicine," American Board of Medical Specialties, 2015, http://www.abms.org/memberboards/contactanabmsmemberboard/americanboardofpreventivemedicine/ (Accessed 4/9/2015).

3 "ACGME Program Requirements for Graduate Medical Education in Preventive Medicine," Accreditation Council for Graduate Medical Education, 7/1/2014.

4 "Booklet of Information," American Board of Preventive Medicine, 2015, p. 3-4.

5 "Top 10 procedure codes by frequency for all specialties - 2014," The Frank Cohen Group, 2014.

PSYCHIATRY

Description and Scope

Scope

Psychiatrists are trained in preventing, diagnosing, and treating a variety of disorders, including: psychotic disorders, mood disorders, anxiety disorders, substance-related disorders, sexual identity disorders, gender identity disorders, and adjustment disorders.[440] They possess a well-rounded knowledge base that covers the biological, psychological, and social factors that contribute to disease; as such, they are equipped to provide holistic patient care.[441] Psychiatrists may prescribe medication, order laboratory tests, and evaluate and treat a series of psychological and psychosocial problems.[442]

Education and Training

Physicians pursing certification in psychiatry through the American Board of Psychiatry and Neurology (ABPN) must complete one of two residency program tracks.[443] The first option is to complete a three-year residency program specializing in psychiatry in addition to one of the following:

(1) A broad-based clinical year of training in primary care;
(2) A transitional year program that includes training in primary care; or
(3) Residency training in a clinical specialty that requires comprehensive and continuous patient care.[444]

Alternatively, a candidate for specialty certification in psychiatry may complete a four-year residency that includes training in primary care. In either track, the psychiatry residency program will train candidates in the prevention, diagnosis, and treatment of mental, addictive, and emotional disorders.[445] Physician seeking sub-specialty certification requires further training,[446] which is outlined in Table 7-26.

440 "American Board of Psychiatry and Neurology" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/psychiatry.aspx (Accessed 4/13/15).
441 "About Physician Specialties: Psychiatry" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/psychiatry.aspx (Accessed 10/08/09).
442 Ibid.
443 "2015 Information for Applicants: Psychiatry Certification Examination" American Board of Psychiatry and Neurology, Inc., 2014, http://www.abpn.com/wp-content/uploads/2015/01/2015-ifa-p.pdf (Accessed 4/9/15), p. 10-11.
444 Ibid.
445 "ACGME Program Requirements for Graduate Medical Education in Psychiatry" Accreditation Council for Graduate Medical Education, February 3, 2014, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/400_psychiatry_07012014.pdf (Accessed 4/9/15), p. 1.
446 "American Board of Psychiatry and Neurology: Psychiatry" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-psychiatry/ (Accessed 4/9/15).

Specialties

ABPN-certified physicians may pursue subspecialty certification in addiction psychiatry, child and adolescent psychiatry, clinical neurophysiology, forensic psychiatry, geriatric psychiatry, hospice and palliative medicine, pain medicine, psychosomatic medicine, sleep medicine, or a combination of these.[447] Table 7-23 elaborates upon these subspecialty areas.

447 "American Board of Psychiatry and Neurology" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/psychiatry.aspx (Accessed 4/13/15).

Table 7-23: Psychiatry Subspecialty Certification offered by ABPN

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Psychiatry	Addiction Psychiatry	"A Psychiatrist who focuses on the evaluation and treatment of individuals with alcohol, drug, or other substance-related disorders and of individuals with the dual diagnosis of substance-related and other psychiatric disorder"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(4)	522	377	121	46.1	99214; 95004; 99213; 99232; 99233; 99231; 90834; G0434; J0585; 83925
	Child and Adolescent Psychiatry	"A Psychiatrist who focuses on the evaluation and treatment of developmental, behavioral, emotional, and mental disorders of childhood and adolescence"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(5)	8,342	6,138	1,731	50.2	N/A
	Clinical Neurophysiology	"A Psychiatrist, Neurologist, Child Neurologist, or Physiatrist who focuses on the evaluation and treatment of central, peripheral, and autonomic nervous system disorders using a combination of clinical evaluation and electrophysiologic testing such as electroencephalography (EEG), electromyography (EMG) and nerve conduction studies (NCS), among others"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(6)	1,459	1,092	331	40.1	N/A
	Forensic Psychiatry	"A Psychiatrist who focuses on the interrelationships between psychiatry and civil, criminal, and administrative law. This specialist evaluates individuals involved with the legal system and provides specialized treatment to those incarcerated in jails, prisons, and forensic psychiatry hospitals"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(7)	667	485	138	43.2	N/A

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Psychiatry	Geriatric Psychiatry	"A Psychiatrist who focuses on the evaluation and treatment of mental and emotional disorders in the elderly"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(8)	997	714	238	47.9	99214; 99309; 99308; 99213; 99232; G8553; 99233; 99306; 99215; 99307
	Hospice and Palliative Medicine*	"These physicians have special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(9)	1	1	0	64.0	99233; 99232; 99223; 99231; 99222; 99214; 99356; 99213; 99309; 99221
	Pain Medicine	"A Psychiatrist who specializes in Pain Medicine diagnoses and treats patients experiencing problems with acute, chronic, and/or cancer pain in both hospital and outpatient settings and coordinates patient care needs with other specialists"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(10)	5	4	0	59.2	N/A

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Psychiatry	Psychosomatic Medicine	"A Psychiatrist who specializes in the diagnosis and treatment of psychiatric disorders and symptoms in complex medically ill patients. This subspecialty includes treatment of patients with acute or chronic medical, neurological, obstetrical, or surgical illness in which psychiatric illness is affecting their medical care and/or quality of life, such as HIV infection, organ transplantation, heart disease, renal failure, cancer, stroke, traumatic brain injury, high-risk pregnancy, and COPD, among others. Patients also may be those who have a psychiatric disorder that is the direct consequence of a primary medical condition, or a somatoform disorder or psychological factors affecting a general medical condition"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(11)	237	171	90	37.7	N/A

(continued)

Specialty	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (2)	Patient Care (2)		Mean Age of Physicians (2)	Representative Current Procedural Terminology Codes (3)
						Office-Based	Hospital-Based		
Psychiatry	Sleep Medicine	"A Psychiatrist with demonstrated expertise in the diagnosis and management of clinical conditions that occur during sleep, that disturb sleep, or that are affected by disturbances in the wake-sleep cycle. This specialist is skilled in the analysis and interpretation of comprehensive polysomnography, and well versed in emerging research and management of a sleep laboratory"	ABPN primary certification, plus licensure, plus one year of subspecialty fellowship training	(12)	17	13	3	51.3	N/A

Notes:

1 "American Board of Psychiatry and Neurology" American Board of Medical Schools, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-psychiatry/ (Accessed 4/13/15).

2 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.

3 "Top 10 Procedure Codes by Frequency For All Specialties-2014" The Frank Cohen Group, 2014.

4 "ACGME Program Requirements for Graduate Medical Education in Addiction Psychiatry" Accreditation Council for Graduate Medical Education, July 1, 2014, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/401_addiction_psych_07012014_1-YR.pdf (Accessed 4/13/15) p. 1.

5 "ACGME Program Requirements for Graduate Medical Education in Child and Adolescent Psychiatry" Accreditation Council for Graduate Medical Education, April 2014, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/405_child_and_adolescent_psych_07012014.pdf (Accessed 4/13/15) p. 19.

6 "ACGME Program Requirements for Graduate Medical Education in Clinical Neurophysiology" Accreditation Council for Graduate Medical Education, July 1, 2014, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/187_clinical_neurophysiology_07012014_1-YR.pdf (Accessed 4/13/15) p. 1.

7 "ACGME Program Requirements for Graduate Medical Education in Forensic Psychiatry" Accreditation Council for Graduate Medical Education, July 1, 2014, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/406_forensic_psych_07012014_1-YR.pdf (Accessed 4/13/15) p. 1.

8 "ACGME Program Requirements for Graduate Medical Education in Geriatric Psychiatry" Accreditation Council for Graduate Medical Education, July 1, 2014, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/407_geriatric_psych_07012014_1-YR.pdf (Accessed 4/13/15) p. 1.

9 "ACGME Program Requirements for Graduate Medical Education in Hospice and Palliative Medicine" Accreditation Council for Graduate Medical Education, February 7, 2015, http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/540_hospice_and_palliative_medicine_07012014_1-YR.pdf (Accessed 4/13/15) p. 2.

10 "Pain Medicine: Specific Training Requirements" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/pain-medicine/ (Accessed 4/13/15).

11 "Psychosomatic Medicine: Specific Training Requirements After 2009" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/psychosomatic-medicine/ (Accessed 4/13/15).

12 "Sleep Medicine: Training Pathway" American Board of Psychiatry and Neurology, Inc., http://www.abpn.com/become-certified/taking-a-subspecialty-exam/sleep-medicine/ (Accessed 4/13/15).

RADIOLOGY

Description and Scope

Scope

Radiologists employ imaging and other radiologic methods in various ways to diagnose and treat disease.[448] Diagnostic radiologists provide diagnostic and therapeutic services that employ x-ray, ionizing radiation, radionuclides, ultrasound, electromagnetic radiation, and image-guided techniques.[449] Radiation oncologists manage the therapeutic application of "radiant energy and its modifiers."[450] They also are responsible for the study and management of disease, most specifically malignant tumors.[451] Radiologic physicists master provision of care in one of three areas: therapeutic radiological physics, diagnostic radiological physics, or medical nuclear physics, as described in Table 7-24.[452]

Education and Training

The American Board of Radiology (ABR) issues primary certificates in diagnostic radiology, radiation oncology, interventional radiology and diagnostic radiology, and medical physics, with residency training varying based on the primary certification sought.[453] Physicians seeking certification in diagnostic radiology must receive one year of clinical training in various medical or surgical specialties (e.g., internal medicine, surgery, and neurology), as well as four years of specialized training in diagnostic radiology, focusing on diagnostic techniques and image-guided therapies.[454] Those physicians seeking certification in radiation oncology must complete a five-year residency focusing on the causes, prevention, and treatment of cancer using ionizing radiation.[455] In order to become certified in interventional radiology and diagnostic radiology, candidates must complete six years of residency training under one of two methods: (1) completion of a diagnostic radiology program, followed by completion of a two-year, *independent* interventional radiology program or (2) completion of a year of clinical work involving direct patient care, followed by completion of a five-year, *integrated* interventional radiology program, of which three years are devoted to diagnostic radiology and two years are

448 "American Board of Radiology" American Board of Medical Specialties, http://www.certificationmatters.org/abms-member-boards/radiology.aspx (Accessed 4/13/15).
449 "About Physician Specialties: Radiology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/radiology.aspx (Accessed 10/08/09).
450 Ibid.
451 Ibid.
452 Ibid.
453 "American Board of Radiology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-radiology/ (Accessed 4/9/15).
454 "ACGME Program Requirements for Graduate Medical Education in Diagnostic Radiology" Accreditation Council for Graduate Medical Education, September 30, 2012, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/420_diagnostic_radiology_07012013.pdf (Accessed 4/9/15), p. 1-2.
455 "ACGME Program Requirements for Graduate Medical Education in Radiation Oncology" Accreditation Council for Graduate Medical Education, September 29, 2013, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/430_radiation_oncology_07012014.pdf (Accessed 4/9/15), p. 1.

devoted to interventional radiology.[456] Training in interventional radiology focuses on image-guided, minimally invasive procedures, and peri-procedural care.[457]

By ABR policy, medical physics represents a grouping of three separate primary specializations: (1) diagnostic medical physics: (2) nuclear medical physics; and (3) therapeutic medical physics.[458] In order to be eligible to seek initial certification in medical physics through the ABR, a candidate must have completed a residency program through the Commission on Accreditation of Medical Physics Educational Programs (CAMPEP) consisting of a minimum of two years of training allowing a resident to "engage in independent clinical practice in a specified field of medical physics."[459]

Specialties

Radiologists with primary certificates in diagnostic radiation may choose to pursue further training in neuroradiology, nuclear radiology, pediatric radiology, vascular and interventional radiology, or hospice and palliative medicine subspecialties.[460] Those certified in radiation oncology may seek subspecialty certification in hospice and palliative medicine.[461] Lastly, radiologic physicists must choose to focus on therapeutic radiological physics, diagnostic radiological physics, or medical nuclear physics.[462] See Table 7-24 for more information about these subspecialty areas.

456 "ACGME Program Requirements for Graduate Medical Education in Interventional Radiology" Accreditation Council for Graduate Medical Education, September 28, 2014, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/415_interventional_radiology_09282014.pdf (Accessed 4/9/15), p. 2, 12, 28.

457 "American Board of Radiology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-radiology/ (Accessed 4/9/15).

458 "Radiology Specialties and Subspecialties" American Board of Radiology, http://www.theabr.org/abr-radiology-specialties-and-subspecialties (Accessed 4/9/15).

459 "ABR Medical Physics Examination Application: CAMPEP Requirements" American Board of Radiology, January 15, 2014, http://www.theabr.org/sites/all/themes/abr-media/pdf/MP_CAMPEP_Policy.pdf (Accessed 4/9/15), p. 1; "Standards for Accreditation of Residency Educational Programs in Medical Physics" Commission on Accreditation of Medical Physics Educational Programs, Inc., March 2015, http://www.campep.org/ResidencyStandards.pdf (Accessed 4/9/15), p. 2.

460 "About Physician Specialties: Radiology" American Board of Medical Specialties, 2009, http://www.abms.org/Who_We_Help/Consumers/About_Physician_Specialties/radiology.aspx (Accessed 10/08/09).

461 Ibid.

462 Ibid.

Table 7- 24: Radiology Subspecialty Certification Offered by the ABR

Specialty (1)	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (3)	Patient Care (2)		Mean Age of Physicians (3)	Representative Current Procedural Terminology Codes (4)
						Office-Based	Hospital-Based		
Diagnostic Radiology	Neuroradiology	A specialist in Neuroradiology diagnoses and treats disorders of the brain, sinuses, spine, spinal cord, neck, and the central nervous system, such as aging and degenerative diseases, seizure disorders, cancer, stroke, cerebrovascular diseases, and trauma. Imaging commonly used in neuroradiology includes angiography, myelography, interventional techniques, and MRI. Two additional years - one year of a fellowship and one year of practice or additional approved training - are required.	Board certification in radiology, 1-2 years of neuroradiology fellowship, optional training in interventional neuroradiology, and maintenance of certification (passing board examination and continuing education requirements)	(5)	43	30	7	53.4	Q9967, 71010, 71020, G0202, 70450, 77052, 7025F, 74177, 74176, 74000
	Nuclear Radiology	A specialist in Nuclear Radiology uses the administration of trace amounts of radioactive substances (radionuclides) to provide images and information for making a diagnosis. Imaging that can involve nuclear radiology include PET (positron emission tomography) and SPECT (single photon emission computed tomography) scans. One additional year of fellowship training is required.	Board certification in radiology, twelve-month fellowship in nuclear radiology, valid medical licensure, passage of board certification exam, and maintenance of certification. A 16-month residency pathway to nuclear radiology subspecialty has also recently been accredited by the ACGME	(6) (7)	184	133	41	48.6	Q9967, 71010, 71020, G0202, 70450, 77052, 7025F, 74177, 74176, 74000

(continued)

Specialty (1)	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (3)	Patient Care (2)		Mean Age of Physicians (3)	Representative Current Procedural Terminology Codes (4)
						Office-Based	Hospital-Based		
Diagnostic Radiology	Pediatric Radiology	A specialist in Pediatric Radiology utilizes imaging and interventional procedures related to the diagnosis, care, and management of congenital abnormalities (those present at birth) and diseases particular to infants and children. A pediatric radiologist also treats diseases that begin in childhood that can cause impairments in adulthood. Two additional years - one year of a fellowship and one year of practice or additional approved training - are required.	Board certification in radiology, twelve-month fellowship in pediatric radiology, valid medical licensure, passage of board certification exam, and maintenance of certification.	(8) (9)	950	641	260	47.7	Q9967, 71010, 71020, G0202, 70450, 77052, 7025F, 74177, 74176, 74000
	Vascular and Interventional Radiology	A specialist in Vascular and Interventional Radiology diagnoses and treats diseases that involve abnormalities of the arteries, veins, and lymphatic system with various radiologic imaging technologies, including fluoroscopy, digital radiography, CT, sonography, and MRI. Therapies include angioplasty, stent placement, thrombolysis, embolization, biliary and genitourinary drainages, abscess drainages, and others. Two additional years - one year of a fellowship and one year of practice or additional approved training - are required.	Board certification in radiology, documented one year fellowship training in accredited vascular and interventional radiology program, additional one year of practice with at least one-third of that year spent in VIR, passage of board examination	(10)	2,532	1,970	519	44.1	Q9967, 71010, 71020, G0202, 70450, 77052, 7025F, 74177, 74176, 74000

Specialty (1)	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (3)	Patient Care (2)		Mean Age of Physicians (3)	Representative Current Procedural Terminology Codes (4)
						Office-Based	Hospital-Based		
Diagnostic Radiology	Hospice and Palliative Medicine	A Diagnostic Radiologist who specializes in Hospice and Palliative Medicine has special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family.	License to practice medicine, current certification with ABR, successful performance on board examination, completion of accredited 12-month fellowship in hospice and palliative care	(11)	1	0	1	72.0	Q9967, 71010, 71020, G0202, 70450, 77052, 7025F, 74177, 74176, 74000
Radiation Oncology	Hospice and Palliative Medicine	A Radiation Oncologist who specializes in Hospice and Palliative Medicine has special knowledge and skills to prevent and relieve the suffering experienced by patients with life-limiting illnesses. This specialist works with an interdisciplinary hospice or palliative care team to maximize quality of life while addressing the physical, psychological, social, and spiritual needs of both patient and family	License to practice medicine, current certification with ABR, successful performance on board examination, completion of accredited 12-month fellowship in hospice and palliative care	(12)	N/A	N/A	N/A	N/A	77300, 77421, 77014, 77418, Q9967, 77427, 77334, 77413, 77336, 77414

(continued)

Specialty (1)	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (3)	Patient Care (2)		Mean Age of Physicians (3)	Representative Current Procedural Terminology Codes (4)
						Office-Based	Hospital-Based		
Interventional Radiology and Diagnostic Radiology		An interventional radiologist combines competence in imaging, image-guided minimally invasive procedures, and periprocedural patient care to diagnose and treat benign and malignant conditions of the thorax (excluding the heart), abdomen, pelvis, and extremities. Therapies include embolization, angioplasty, stent placement, thrombus management, drainage, and ablation, among others. Training includes a minimum of three years of diagnostic radiology and two years of interventional radiology, leading to primary certification in Interventional Radiology and Diagnostic Radiology.	Complete one of two program pathways: (1) a five-year integrated program including 3 years of training in diagnostic radiology and 2 years in interventional radiology, or (2) a two-year independent program after completion of a diagnostic radiology residency. Following completion of either pathway the candidate must pass their board accreditation exams.	(13)	N/A	N/A	N/A	N/A	Q9967, Q9966, 71010, 71020, 70450, 76937, 77001, 36147, 75978, 35476
Medical Physics	Diagnostic Medical Physics	A specialist in diagnostic medical physics uses x-rays, gamma rays from sealed sources, ultrasound, and magnetic resonance in diagnostic procedures; maintains the equipment associated with their production and use; and applies standards for the safe use of radiation.	For all Medical Physics subspecialties, there is a 3-part series of credentialing standards that must be passed. Part 1 - Consists of a General and a Clinical Exam. The candidate must be enrolled in good standing or have graduated from a CAMPEP-accredited program.	(14)	N/A	N/A	N/A	N/A	N/A

Specialty (1)	Subspecialties (1)	Description (1)	Educational Requirements		Total Physicians (3)	Patient Care (2)		Mean Age of Physicians (3)	Representative Current Procedural Terminology Codes (4)
						Office-Based	Hospital-Based		
Medical Physics	Nuclear Medical Physics	A specialist in nuclear medical physics uses radionuclides (except those used in sealed sources for therapeutic purposes) for diagnosing and treating conditions; maintains the equipment associated with their production and use; and applies standards for the safe use of radiation.			N/A	N/A	N/A	N/A	N/A
	Therapeutic Medical Physics	A specialist in therapeutic medical physics uses x-rays, gamma rays, electron, and other charged particle beams, neutrons, and radiations from sealed radionuclide sources in the treatment of conditions; maintains the equipment associated with their production and use; and applies standards for the safe use of radiation.	Part 2 - Consists of the specialty exam (diagnostic, nuclear, or therapeutic). The candidate must be a graduate of an accredited CAMPEP program and have passed Part 1. Part 3 - The oral exam for the specialty in which the candidate is seeking certification. The candidate must have passed Part 1 and 2 to be eligible for Part 3.		N/A	N/A	N/A	N/A	N/A

Notes:

1 "Radiology Specialties and Subspecialties" American Board of Radiology, http://www.theabr.org/abr-radiology-specialties-and-subspecialties (Accessed 4/9/2015).
2 "American Board of Radiology" American Board of Medical Specialties, http://www.abms.org/member-boards/contact-an-abms-member-board/american-board-of-radiology/ (Accessed 4/10/2015).
3 "Physician Characteristics and Distribution in the US" Edited By Derek R. Smart, 2015 Edition, Chicago, IL: American Medical Association, 2015, p. 15-28.
4 "Top 10 procedure codes by frequency for all specialties - 2014" The Frank Cohen Group, 2014, http://www.frankcohengroup.com/Library/ReferenceData.aspx (Accessed 4/10/2015).
5 "What is Neuroradiology" American Society of Neuroradiology, 2013, http://www.asnr.org/patientinfo/whatisnr.shtml#sthash.7g29AvhP.dpbs (Accessed 4/13/15).
6 "ACGME Program Requirements for Graduate Medical Education in Nuclear Radiology" Accreditation Council for Graduate Medical Education, 2015, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/425_nuclear_radiology_2016_1-YR.pdf (Accessed 4/13/15).
7 "Initial Certification: Nuclear Radiology" The American Board of Radiology, 2015, http://www.theabr.org/ic-nuc-landing (Accessed 4/13/15).
8 "ACGME Program Requirements for Graduate Medical Education in Pediatric Radiology" Accreditation Council for Graduate Medical Education, 2015, https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/424_pediatric_diag_rad_07012013_1-YR.pdf (Accessed 4/13/15).
9 "Initial Certification: Pediatric Radiology" The American Board of Radiology, 2015, http://www.theabr.org/ic-ped-landing (Accessed 4/13/15).
10 "Initial Certification: Vascular and Interventional Radiology" The American Board of Radiology, 2015, http://www.theabr.org/ic-vir-req (Accessed 4/13/15).
11 "Initial Certification: Hospice and Palliative Care" The American Board of Radiology, 2015, http://www.theabr.org/ic-hpm-req#require (Accessed 4/13/15).
12 Ibid.
13 "Initial Certification: Interventional Radiology" The American Board of Radiology, 2015, http://www.theabr.org/ic-irdr-landing (Accessed 4/13/15).
14 "Initial Certification: Medical Physics" The American Board of Radiology, 2015, http://www.theabr.org/ic-rp-req (Accessed 4/13/15).

CONCLUSION

Medicine has historically been viewed as a learned profession, where healthcare providers were perceived as professionals who applied significant training and knowledge to provide quality patient care from within their independent practice. However, the recent shift from small, physician/provider-owned, independent private practices to captive practices within larger integrated health systems, may be viewed as the "corporatization" of healthcare professional practices, which some believe may result in a weakening of the independent physician/provider-patient relationship, a characteristic of the "cottage industry" healthcare delivery system of old.[463] As the healthcare industry and the fields of medicine, science, and technology evolved, influenced by changes in the four pillars, i.e., the reimbursement, regulatory, competitive, and technological environments of the healthcare industry, the paradigm by which healthcare professionals and professional practices operate have continued to change as well.

The U.S. healthcare industry is governed by a network of ever-changing state and federal regulations, relating to both *physician* and *non-physician professionals,* and faces continuous changes related to the regulatory and reimbursement environments. For example, State and Federal legislative and regulatory agendas have acted to restrict physician ownership of, or investment in, Ancillary Services and Technical Component (ASTC) revenue stream enterprises, effectively limiting physicians in private practice to receiving revenues only from their professional fees as physicians and not from the related activities of their practice, e.g., diagnostic imaging services. As revenue streams available to physicians continue to be more restricted, there has been a corresponding a rise in the number of hospital acquisitions of physician practices, with the concurrent direct employment of physicians by hospitals, especially for those specialties with significant ASTC revenue, which are perceived to be more profitable and well-suited to provide services in a hospital-based setting (e.g., cardiology, orthopedics, radiology, etc.). As shrinking reimbursement and increasing regulatory edicts compel physicians to acquiesce to an untenable profitability squeeze and accept employee status under the substantial control of hospital systems or large corporate players, this circumstance has been viewed by some as relegating physicians to the status of "*sharecroppers*" or "*hired help*", ultimately signaling the twilight of what was perceived to be the golden era of medical practices in the U.S.

Also, within the uncertainties of the current reimbursement environment and the well-publicized challenges of physicians dealing with insurance companies as advocates for their patients, young physicians, saddled with enormous training debt, are more readily than in the past, opting out of private, independent practice to pursue a more risk-averse salaried employment by hospitals and health systems in an effort to obtain a more "*comfortable*" lifestyle (e.g., more regular hours) and less entrepreneurial aspirations. This trend has made it increasingly difficult for older independent practitioners to recruit junior partners, a struggle which, paired with the burden of diminishing reimbursement and rising regulatory scrutiny in recent years, has led many physician-owners to abandon their independent practices to hospitals.

463 "More Doctors Giving Up Private Practices" By Gardiner Harris, New York Times, March 25, 2010, http://www.nytimes.com/2010/03/26/health/policy/26docs.html (Accessed 5/25/10); "The Social Transformation of American Medicine," by Paul Starr, Basic Books Inc. 1982, p. ix.

As discussed in several other sections in this *Guide*, the U.S. is likely facing a growing physician manpower shortage in coming years, across all specialties.[464] In March of 2015, the AAMC published projections on the adequacy of the physician workforce through 2025. This report projected a shortage ranging from 46,100 to 90,400 physicians.[465] This trend is driven by several factors, including the work patterns of younger physicians,[466] growth in the insured population due to the ACA,[467] and the growth of an aging baby boomer population,[468] which typically utilizes a greater proportion of health services than the non-elderly population.[469]

In response to these findings, the AAMC noted, "because physician training can take up to a decade, a physician shortage in 2025 is a problem that needs to be addressed in 2015,"[470] indicating that immediate action is necessary in order to avert a significant shortfall of physician services. In response to this impending shortfall, physicians may come to rely on non-physician practitioners (e.g., physician assistants, nurse practitioners, and other physician extenders) to triage more routine services that may have been historically provided by physicians.

Furthermore, the study that projected a shortage of physicians by 2025 was based on the assumption that, currently, supply and demand for physician specialist services are in equilibrium, i.e., there is not a physician shortage currently.[471] However, this assumption may not hold true for all specialties. For example, a study of the physician workforce in Massachusetts found shortages in both gastroenterology and neurology.[472] Accordingly, the projected shortage of physician services may be worse than assumed.

As this chapter has demonstrated, the competitive boundaries within and across physician specialties are increasing in malleability due to pressure from ongoing workforce strains, perpetual developments in innovation and technology, trends in reimbursement, and regulatory constraints. Although the shortage is expected to affect all three specialty categories, primary care and surgical specialties are expected to bear the brunt of the physician shortage.[473] In fact, medical specialists may experience a broadening of their scope of practice as a result of the primary care physician shortage.[474] The potential role of specialty physicians as principal care

464 "The Complexities of Physician supply and Demand: Projections from 2013 to 2025 – Final Report" IHS, Inc., March 2015, p. vi

465 "The Complexities of Physician Supply and Demand: Projections from 2013 to 2025" IHS Inc., Report for Association of American Medical Colleges, March 2015, https://www.aamc.org/download/426242/data/ihsreportdownload.pdf?cm_mmc=AAMC-_-ScientificAffairs-_-PDF-_-ihsreport (Accessed 3/9/15), p. v, 23.

466 "The Complexities of Physician supply and Demand: Projections from 2013 to 2025 – Final Report" IHS, Inc., March 2015, p. 6-8; "Wanting it All: A New Generation of Doctors Places Higher Value on Work-Life Balance" By Eve Glicksman, Association of American Medical Colleges, May 2013, https://www.aamc.org/newsroom/reporter/336402/work-life.html (Accessed 3/30/15).

467 "The Complexities of Physician supply and Demand: Projections from 2013 to 2025 – Final Report" IHS, Inc., March 2015, p. vi.

468 "The Complexities of Physician Supply and Demand: Projections from 2013 to 2025 – Final Report" IHS, Inc., March 2015, p. v-vi.

469 "US Health Spending by Age and Gender: Selected Years 2002-10" By David Lassman, et al., Health Affairs, Vol. 33, No. 5, May 2014, http://content.healthaffairs.org/content/33/5/815.abstract (Accessed 7/27/15), p. 815.

470 "Physician Supply and Demand Through 2025: Key Findings" Association of American Medical Colleges, https://www.aamc.org/download/426260/data/physiciansupplyanddemandthrough2025keyfindings.pdf (Accessed 4/3/15), p. 1.

471 "The Complexities of Physician Supply and Demand: Projections from 2013 to 2025" IHS Inc., Report for Association of American Medical Colleges, March 2015, https://www.aamc.org/download/426242/data/ihsreportdownload.pdf?cm_mmc=AAMC-_-ScientificAffairs-_-PDF-_-ihsreport (Accessed 3/9/15), p. 27.

472 "2013 MMS Physician Workforce Study" Massachusetts Medical Society, September 2013, http://www.massmed.org/News-and-Publications/Research-and-Studies/2013-MMS-Physician-Workforce-Study-%28pdf%29/ (Accessed 4/8/15), p. 3.

473 "The Complex Dynamics of the Physician Workforce: Projected Supply and Demand through 2025" HIS, Inc., March 2015, https://www.aamc.org/download/426242/data/ihsreportdownload.pdf?cm_mmc=AAMC-_-ScientificAffairs-_-PDF-_-ihsreport (Accessed 4/13/15), p. 41.

474 "Invited Article: The US Health Care System: Part 1: Our Current System" By M.R. Nuwer et al., Neurology, Vol. 71 (2008), p. 1911; "The Complex Dynamics of the Physician Workforce: Projected Supply and Demand through 2025" By Michael J. Dill and Edward S. Salsberg, Center for Workforce Studies, Association of American Medical Colleges, November 2008, p. 27.

providers for patients with certain specified illnesses may alleviate the manpower burden suffered by primary care physicians and, at the same time, further intensify competition between specialty medicine and primary care.[475]

Unfortunately, there does not appear to be a "quick-fix" solution to counteract the clinician shortage facing the healthcare workforce, mainly due to the investment of time required to train healthcare professionals (for example, it can take up to fifteen years to train certain specialized physicians) and the increasing demand for healthcare services by the growing baby boomer population. These significant changes have prompted new structures in emerging healthcare organization (EHOs) for the delivery of U.S. healthcare services, the impact of these organizational structures are discussed in Chapter 6 of the second volume of this *Guide*. The rapid pace and significant degree at which these EHOs are expanding portend an unsteady and uncertain future for independent professional physician practices.

475 "Invited Article: The US Health Care System: Part 1: Our Current System" By M.R. Nuwer et al., Neurology, Vol. 71 (2008), p. 1911.

Table 7-25: Highlights in the Four Pillars for Physician Specialties

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
General Practice	Title VII Section 747 of the Public Health Service Act made cuts to primary care training grants that provide medical students with exposure to primary care settings outside the academic medical center Potential solutions to the shortage of primary care physicians include providing more financial incentives to attract new medical school graduates to the primary care practice as well as expanding exposure to primary care during medical school	(1) (2)	The most apparent reason for the shortage of primary care physicians is the gap in pay between primary care physicians and specialists Specialists are often compensated twice as much as primary care physicians Under the 2015 Physician Fee Schedule (PFS), primary care providers may now receive Medicare reimbursement for chronic care management services.	(3) (4) (90)	Specialists are often compensated at rates nearly double that of primary care physicians and usually work more predictable work hours Medical students graduate with a significant amount of debt (often over $100,000), which drives many new doctors to specialize	(5) (6)	Increased telemedicine capacities are increasing the range of services that general/family practitioners may offer their patients, including convenient, on-the-spot consultations with specialty physicians. The implementation of EHRs will significantly enhance the ability of general/family practitioners to improve patient health, particularly in the context of the Patient Centered Medical Home.	(88) (89)

(continued)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Family Medicine	Potential solutions to the shortage of primary care physicians include providing more financial incentives to attract new medical school graduates to the primary care practice as well as expanding exposure to primary care during medical school Medical liability insurance premiums for physicians practicing family medicine have dropped 5.8% even though the number of malpractice claims was predicted to increase in 2014.	(2) (87)	Reimbursement for family medicine services has gradually increased over the last 3 years. In 2013, Medicare reimbursements under the PFS rose 7%. In 2014, Medicare reimbursements under the PFS remained constant. In 2015, Medicare reimbursements under the PFS rose 1%. The ACA provides a 10% bonus payment on certain primary care services furnished in 2015. Under the 2015 PFS, primary care providers may now receive Medicare reimbursement for chronic care management services.	(83) (84) (85) (86) (90)	At the apex of primary care, the medical home is "a concept or model of care delivery that includes an ongoing relationship between a provider and patient, around the clock access to medical consultation, respect for the patient/family's cultural and religious beliefs, and a comprehensive approach to care and coordination of care through providers and community services." This medical home model has been the highlight of many reform discussions and deliberations, and it is considered essential for the survival of family medicine Resurgence of primary care, especially the central role of the family practitioner to the provision of medical care to the family unit, is dependent upon this model, especially as competition becomes increasingly steep between primary care physicians and specialists	(7) (8) (9)	Increased telemedicine capacities are increasing the range of services that general/family practitioners may offer their patients, including convenient, on-the-spot consultations with specialty physicians. The implementation of EHRs will significantly enhance the ability of general/family practitioners to improve patient health, particularly in the context of the Patient Centered Medical Home.	(88) (89)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Internal Medicine	Potential solutions to the shortage of primary care physicians include providing more financial incentives to attract new medical school graduates to the primary care practice as well as expanding exposure to primary care during medical school Medical liability insurance premiums for physicians practicing family medicine have dropped 11.7% even though the number of malpractice claims was predicted to increase in 2014.	(2) (87)	Reimbursement for internal medicine services has gradually increased over the last 3 years. In 2013, Medicare reimbursements under the PFS rose 4%. In 2014, Medicare reimbursements under the PFS rose 1%. In 2015, Medicare reimbursements under the PFS rose 1%. Under the 2015 PFS, primary care providers may now receive Medicare reimbursement for chronic care management services.	(83) (84) (85) (90)	Despite significant efforts to redirect medical students to primary care, long-term results are still inconclusive. Significant amounts of Internal Medicine graduates are predicted to continue to subspecialize, rather than practice General Internal Medicine.	(10) (11)	Increased telemedicine capacities are increasing the range of services that internal medicine practitioners may offer their patients, including convenient, on-the-spot consultations with specialty physicians. The implementation of EHRs will significantly enhance the ability of general/family practitioners to improve patient health, particularly in the context of the Patient Centered Medical Home.	(88) (89)
Pediatrics	While the ACA's essential health benefit requirements establish pediatric services as a required coverage class, neither the act nor the resulting regulations define what these services entail. HHS has made a commitment to review its approach in 2016, which may have implications for future regulations regarding pediatric services under the ACA's essential health benefit requirements.	(115)	Reimbursement for pediatric services has gradually increased over the last 3 years. In 2013, Medicare reimbursements under the PFS rose 3%. In 2014 and 2015, Medicare reimbursements under the PFS remained constant.	(83) (84) (85)	Trends show greater competition in solo, group, or medical school practices as compared with staff- or group-model HMOs or community hospitals Pediatricians practicing in the Midwest or Southern region of the United States experience more competition than in other regions of the country Internal medical groups, pediatricians in rural areas, and female pediatricians experience less competition than other types of pediatricians	(12) (13) (14)	Increased digital connectivity and the use of telemedicine is improving pediatric care by saving time and money for patients and physicians. New initiatives to help balance teen privacy and parental EHR access helps to increase effectiveness of health care for teens Digital games can help clinicians control pain and stress in pediatric emergency care patients	(116)

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Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
OB/GYN	Obstetricians and gynecologists are reducing scope of services, volume of services, or both due to the significant risk of medical liability and litigation associated with certain procedures that they perform. An average of 18% of gross income is spent on liability insurance premiums.	(15) (16)	Reimbursement for OB/GYN services has remained relatively constant over the last 3 years. In 2013, Medicare reimbursements under the PFS remained constant. In 2014, Medicare reimbursements under the PFS rose 1%. In 2015, Medicare reimbursements under the PFS decreased by 1%.	(83) (84) (85)	An increasing number of obstetrics and gynecology services are being delivered on an outpatient basis. Trends indicate that demand for obstetricians and gynecologists is increasing and that the range and quality of treatments and technologies are improving. As more value is placed on value, rather than volume, generalist obstetricians and gynecologists will "become more integral to a health system."	(17) (18) (19)	Technological trends in OB/GYN include continued use and implementation of robotic surgery programs, electrosurgery utilization, implementation of laparoscopic procedures for minimally invasive hysterectomies, and new devices and apps that focus on connectivity, synching, and 3D mapping.	(117)
Bariatric Surgery	One in every two bariatric surgeons will have a malpractice claim filed against them in their career, though nearly 70% of those claims are dropped. Malpractice insurers are taking steps to create unique malpractice programs specifically for bariatric surgeons.	(118) (119)	Bariatric surgery is still debated as a means of cost savings in healthcare, partially due to the fact that patients tend to need significant amounts of follow-up care in order to adjust to their new lifestyles and maintain weight loss. Hospital payments associated with bariatric surgery dropped 13% from 2002 to 2006, a decline that was attributed to fewer complications and readmissions In 2006, Medicare expanded coverage of bariatric surgery for all beneficiaries.	(20) (21) (22)	The growing population suffering from obesity and its related comorbidities has increased the demand for obesity treatments, including bariatric surgery. As the demand for bariatric surgery has risen the American Gastroenterological Association has called for gastroenterologists to assume a larger role in treating bariatric surgery patients.	(120) (121)	The rise in bariatric surgery can be attributed to the development of less invasive, laparoscopic techniques. Complications associated with bariatric surgery are declining as a result of increased used of laparoscopy, increased use of banding through procedures that do not rely on gastric bypass, and increased surgeon experience.	(23) (24)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Colon and Rectal Surgery	As physician reimbursement continually becomes tied to patient outcomes, useful metrics for colorectal surgery in ambulatory surgery settings must be developed to improve outcome assessments.	(130)	Reimbursement for OB/GYN services has remained relatively constant over the last 3 years. In 2013, Medicare reimbursements under the PFS increased by 2%. In 2014 and 2015, Medicare reimbursements remained constant.	(83) (84) (85)	Only 93 of 110 applicants to colon and rectal surgery fellowships were filled in 2015.	(92)	Advances in laparoscopic and robotic minimally invasive surgery procedures have improved the surgical capabilities and detection or management strategies used to treat colon and rectal cancer. Laparoscopy has proven to be less invasive and less painful than conventional methods, therefore requiring shorter recovery time with improved patient outcomes.	(25) (26)
Neurological Surgery	Neurosurgery spinal procedures are increasingly being performed at ASCs with new spine-related CPT codes being added to Medicare's list of ASC covered surgical procedures every year.	(133)	Reimbursement for neurological surgery services has remained relatively constant over the last 3 years. In 2013 and 2014, Medicare reimbursements under the PFS remained constant. In 2015, Medicare reimbursements under the PFS rose by 1%. Payment for imaging services may be reduced based on the utilization rate of medical imaging equipment. For providers owning imaging equipment that costs over $1 million, any utilization rate lower than 90% will result in reimbursement penalties.	(83) (84) (85) (91)	The scope of surgical procedures within neurosurgery has broadened tremendously in the past fifteen years as a result of the changing population, technological and procedural advances, and improved organizational planning by neurosurgical departments and practices. Technological changes in the healthcare market such as available imaging services, surgical specialists offering competing services, and others affect the market for neurosurgeons.	(27)	The scope of neurosurgical procedures has broadened to include sterotactic neurosurgery, functional neuroimaging, surgical navigation, intraoperative MRI, surgery for intractable epilepsy, and deep brain stimulation. The above treatment methods have become increasingly successful when paired with anticipated technological developments.	(28) (29)

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Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Ophthalmic Surgery	In 2014, CMS released 2012 data on Medicare reimbursements, which showed ophthalmologists - more than any other specialty - were the biggest recipients of Medicare money. The data could result in increased regulatory scrutiny for the profession in the future.	(129)	Reimbursement for ophthalmic surgery services has gradually decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased by 3%. In 2014, Medicare reimbursements under the PFS remained constant from 2013 levels. In 2015, Medicare reimbursements under the PFS decreased from 2014 levels by 2%.	(83) (84) (85)	There is increasing demand for nonsurgical and surgical ophthalmic procedures as a result of current demographic changes.Ophthalmologists face competition from nonphysician professionals, such as optometrists.	(30) (31)	Technological developments in cataract surgery such as the introduction of the femtosecond laser are changing the way surgery is done by automating principle steps of surgery previously done by hand.The cost associated with adaptation of these technological advancements can be significant for practices with limited capital.Ophthalmology practices are increasingly adopting and utilizing EMRs.	(122)
Orthopedic Surgery	Physician-owned distributorships, seen as an innovative alternative of managing costs for orthopedic professionals, are raising concerns among government regulatory enforcement agencies that could lead to increased scrutiny and potential fraud and abuse liability.	(127) (128)	Reimbursement for orthopedic surgery services has gradually decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS remained constant from 2012 levels. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 2%. In 2015, Medicare reimbursements under the PFS decreased from 2014 levels by 1%. Payment for imaging services may be reduced based on the utilization rate of medical imaging equipment. For providers owning imaging equipment that costs over $1 million, any utilization rate lower than 90% will result in reimbursement penalties.	(83) (84) (85) (91)	In-office imaging has become commonplace in orthopedic practices, allowing for increased efficiency, accessibility, and quality of care, but it has also resulted in increased competition with radiologists. Larger orthopedic practices with broader scopes of service tend to be more successful than smaller practices due to greater bargaining power between payors and providers. Expanding practices by way of mergers, sales, or acquisitions may be more advantageous as demand for services grows.	(32) (33) (34)	Less and minimally invasive surgery techniques are difficult to master and require large expenditures on equipment, but result in improved outcomes and increased patient satisfaction. These techniques can offer invaluable economies of scale as long as the surgeons that invest in them have mastered the techniques employed; otherwise, increased complication rates and longer procedural times may result.	(35) (36)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Otolaryngology	Otolaryngologists are often affected most by regulatory policies affecting the Medicare Physician Fee Schedule, the Hospital Outpatient Prospective Payment System, and Ambulatory Surgery Center Rules.	(132)	Implementation of image-guided navigational systems (IGS) in otolaryngology and other specialty areas has resulted in controversy surrounding the technical and professional fees for associated services. In light of the Centers for Medicare and Medicaid Services' (CMS's) concern regarding "standard of care" as it is viewed by payors, it has been suggested that IGS services will be bundled with codes for endoscopic sinus surgery when it is used with more than 50% of procedures.	(37) (38)	In 2015, only 299 of 430 applicants for otolaryngology residencies were accepted.	(93)	Minimally invasive techniques and image guidance technology have become feasible options in otolaryngology. IGS have contributed tremendously to the field of rhinology, enhancing the efficiency of endoscopic sinus surgery.	(39) (40)

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Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Plastic Surgery	Plastic surgeons, though a small percentage of all physician specialists, are one of the most frequently sued specialties among all physicians. Accordingly, plastic surgeons should take serious malpractice precautions to mitigate their malpractice liability.	(131)	Though reconstructive surgery typically is covered by most policies, the degree of coverage and services included vary. Coverage of reconstructive procedures in hospital and freestanding outpatient departments declined significantly in 2005, when CMS removed thirty-five reconstructive procedures from the list of services covered by Medicare when performed in an ASC. Volume of reconstructive procedures performed on an annual basis continues to grow.	(41) (42) (43)	In 2015, only 148 of 206 applicants for integrated plastic surgery residencies were accepted.	(93)	One specific factor that may contribute to projected industry growth is the increased availability of minimally invasive cosmetic procedures. Minimally invasive cosmetic procedures are classified as injectables (for example, Botox, hyaluronic acid, collagen, and so forth), facial rejuvenations (for example, chemical peel, dermabrasion, IPL laser treatment, microdermabrasion, and so forth), and other procedures (for example, injection lipolysis, laser hair removal, laser treatment of leg veins, and sclerotherapy).	(44) (45)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Thoracic Surgery	Regulatory actions that address Medicare payment reform, access to clinical outcomes data, and the cardiothoracic surgery workforce shortage are all priority advocacy measures for thoracic surgery specialists.	(134)	Decreased enrollment in residency programs may be a consequence of several competition- and reimbursement-related factors paired with the difficulties that recent graduates have faced when finding jobs. In addition to a declining incidence rate of coronary artery bypass grafting (CABG), Medicare has reduced reimbursement rates for the procedure by 38%.	(46) (47)	Decreased physician interest in this specialty area may be attributed to developments in cardiac and drug-eluting stents during the past decade, which are technologies used in procedures performed by cardiologists as opposed to cardiac surgeons. Cardiac stent placements, which increased 121% from 1997 to 2004, compete with coronary artery bypass grafting (CABG) procedures that cardiac surgeons perform. Demand has grown for a number of non-CABG services such as valve procedures, other open-heart procedures, and lobectomies or pneumonectomies.	(48)	Traditional open chest thoracic surgery now has a number of alternatives including thoracoscopy (also referred to as video-assisted thoracic surgery) and da Vinci Surgery, which offer less invasive procedures and quicker recovery times for thoracic surgery patients.	(123)

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Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Urology	Lithotripsy centers, at which most urinary stone surgeries are performed, are exempt from prohibition of physician self-referral. Physicians can refer their patients to ASCs or lithotripsy centers in which they have ownership, allowing them to receive payment for both their professional services as well as for the facility services. During the past ten years, investment by urologists in ASCs has increased from 12% to 21%, and their investment in lithotripsy centers has increased from 26% to 54%.	(49)	Reimbursement for urology services has gradually decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased from 2012 levels by 1%. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 1%. In 2015, Medicare reimbursements under the PFS remained constant.	(83) (84) (85)	Recent trends in the work force demographic of urology suggest that there will be a shortage of practitioners and a surplus of patients, as the baby boomer generation grows older. Due to the expected shortage of urologists in the future, there is a push for increased graduate medical education funding and resources to increase the number of medical students practicing in the field of urology.	(94) (95)	Laparoscopic procedures have become the standard in removing gallbladders and kidneys, despite difficulties arising from the restricted motion associated with such procedures. The use of robotic urological surgery has grown tremendously, with almost 80% of all prostatectomies in the U.S. occurring with robotic assistance in 2010. The technology is expected to continue expanding, with a robot being implemented into two new surgical programs every week.	(50) (51) (52)
Allergy and Immunology	In 2010, only 38% of allergists and immunologists reported increases in their liability insurance premiums, a stark contrast to 5 years earlier when nearly two thirds reported increases in their liability insurance premiums. Changes in practice as a consequence of increased premiums are negligible.	(53)	Reimbursement for allergy and immunology services has remained relatively constant over the last 3 years. In 2013, Medicare reimbursements under the PFS increased from 2012 levels by 3%. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 3%. In 2015, Medicare reimbursements under the PFS remained constant.	(83) (84) (85)	Market competition has been influenced largely by regional factors, because there has been a recent redistribution of this specialty's workforce. In 2015, only 126 of 155 applicants for allergy & immunology fellowships were accepted.	(54) (92)	Pharmaceutical markets have begun shifting developments toward "specialty drugs" prescribed by physicians in immunology, oncology, and neurology. Developments in multi-photon microscopy have enabled immunologists to observe infection as it takes form, allowing researchers and physicians to observe pathogenic behavior outside the confinement of a Petri dish.	(55) (56)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Anesthesiology	Many states have taken the lead in regulating the administration of anesthesia, creating their own legislation that allows non-physicians to administer anesthesia when qualified under state law. Federal standards also govern the administration of anesthesia, including who can administer anesthesia and where.	(96) (97)	Reimbursement for anesthesiology services has gradually increased over the last 3 years. In 2013, Medicare reimbursements under the PFS increased from 2012 levels by 1%. In 2014, Medicare reimbursements under the PFS increased from 2013 levels by 1%. In 2015, Medicare reimbursements under the PFS remained constant.	(83) (84) (85)	The demand for certified registered nurse anesthetists (CRNA) may be surpassing the demand for anesthesiologists. Anesthesiologists have become increasingly protective of their revenue stream and scope of services, specifically due to reduced anesthesiologist compensation rates paired with increased use of CRNAs in hospitals and surgical facilities. Recent Medicare requirements permitting states to "opt out" of CRNA physician supervision requirements further heated the controversy surrounding this intraprofessional competitive dimension.	(57) (58)	Pharmacological and therapeutic developments in anesthesiology span services in pain management, endocrinology, hematology, intravenous fluid therapy, and surgery. Trends suggest increased use of rapidly biotransforming pharmaceuticals within anesthesiology.	(59) (60)
Dermatology	In some states, dermatologists should be aware of the laws regarding the use of midlevel providers at medical spas. There will likely be increased regulations regarding the practice of dermatology by non-dermatologists, a growing concern as medical spas become more popular.	(98) (99)	Insurance carrier caps on prescription drug spending reimbursement have a sizable effect on the reimbursement environment for dermatology.	(61)	The growing patient demand for dermatology services has not been met with increased numbers of dermatologists, but rather increased volumes of nonphysician practitioners working in dermatology practices.This may result in relieving demand induced pressures, but it has also opened competitive floodgates that may keep patient volumes low.	(62)	Discoveries in biologics allow psoriasis patients to visit the office on a less frequent basis and to manage their symptoms with only one or two injections per week.Advancements in laser technology now make hair and scar removal very precise, and digital photography minimizes mistakes once made by taking a biopsy or operating on the incorrect spot.Dermatologists now offer cosmetic procedures once found only in plastic surgeons' offices, allowing patients to have all their skincare needs met in one location.	(63)

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Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Emergency Medicine	EMTALA requirements and guidance on personal protective equipment have been scrutinized for emergency medicine in regards to highly infectious diseases like Ebola.	(100)	Reimbursement for emergency medicine services has gradually increased over the last 3 years. In 2013, Medicare reimbursements under the PFS remained constant from 2012 levels. In 2014, Medicare reimbursements under the PFS increased from 2013 levels by 2%. In 2015, Medicare reimbursements under the PFS increased from 2014 levels by 1%.	(83) (84) (85)	Despite the growth in the number of emergency medicine residency programs, the number of practicing physicians is not effectively meeting the growth in patient demand; in fact, supply is expected to continue to fall short for the next thirty years. There has been an increase in the utilization of nurse practitioners and physician assistants in emergency departments.	(64)	With the rise of smartphones and wearable technology, there is also a rise in the number of emergency medical technology devices available for physicians to use as well as individuals in their own homes.	(101)
Medical Genetics	The FDA has the primary authority to regulate genetic test kits for at-home and clinical use, whereas CMS regulates clinical laboratories and the FTC regulates advertising related to the genetic testing.	(102)	As the cost of genetic testing increases, insurers are becoming more reluctant to pay providers for medical genetic services, often demanding proof of effectiveness of genetic tests before agreeing to offer reimbursements.	(124)	As the capabilities afforded by genetic and genomic knowledge expand through the research of medical geneticists, the question of who will provide services becomes easily apparent. Although the potential benefits can be seen across all specialty areas, trends seem to suggest that primary care practitioners will need to assume a greater role in prevention and early detection. While medical geneticists traditionally are viewed as providers of care to those with genetic, genetically influenced, or genetically transmitted disorders, it may be argued that their scope of practice needs to be broadened to include genomic medical services.	(65)	Medical genetics is continually influenced by advances in biochemistry, genetics, genomics, proteomics, metabolomics, and pharmacogenetics, especially in the availability of testing procedures.	(65)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Neurology	Concern has been raised in recent years due to the increased involvement of pharmaceutical companies in neurologic education and close-knit relationships between neurologists and pharmaceutical representatives. Regulators have been concerned with the potential overuse and abuse of pharmaceuticals, as well as diagnostic imaging services, and have considered adopting disincentives for direct-to-consumer marketing and capping medication prices.	(66) (67)	Reimbursement for neurology services has decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased from 2012 levels by 7%. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 1%. In 2015, Medicare reimbursements under the PFS remained constant.	(83) (84) (85)	A clear delineation exists between neurological and neurosurgical practices, with the former providing evaluative and management services and the latter heavily focusing on procedural care. Evaluation and management services are reimbursed insufficiently, so these services are promoted sparsely and scarcely sought out. The American Academy of Neurosurgery (AAN) is advocating for increased emphasis on principal care (care provided by specialists) in the medical home model.	(68)	Developments in advanced imaging technology have had a tremendous affect on the practice of neurology, in which evaluation and management are emphasized and diagnostic methodologies to "identify the anatomical focus of dysfunction" are central to practice. Therapies and scientific discoveries also have surfaced recently that may aid in the detection, management, treatment, and delayed onset of Parkinson's disease, multiple sclerosis, and dementia. New technologies have enhanced neurologists' capabilities in pain management, treatment of sleep disorders, and migraine treatment.	(69) (70)

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Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Nuclear Medicine	CMS and the FDA continue to release final rules and clarifications on current regulatory provisions regarding efficiency, transparency, coverage of specific scans, and practice techniques due to the evolving nature of the nuclear medicine field.	(103)	Reimbursement for nuclear medicine services has gradually decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased from 2012 levels by 3%. In 2014 and 2015, Medicare reimbursements under the PFS remained constant. Payment for imaging services may be reduced based on the utilization rate of medical imaging equipment. For providers owning imaging equipment that costs over $1 million, any utilization rate lower than 90% will result in reimbursement penalties.	(83) (84) (85) (91)	Spending on advanced imaging services (nuclear medicine, CT, and MRI) is growing at a faster rate than less sophisticated imaging techniques. Recent trends suggest a marked difference in utilization of nuclear medical procedures between hospital and nonhospital sites, because hospital sites are more inclined to provide services related to tumor localization, radionuclide therapy, and bone scans.	(71) (72) (73)	A major driver of the increased use of nuclear medicine may be developments in "fusion imaging" (for example, development and integration of PET-CT and single photon emission computed tomography (SPECT-CT) technology into nuclear medicine practice. The available technology has enabled nuclear medicine practices to expand their scope of service to include cardiology and radiology procedures (for example, imaging typical of catheterization labs, CT and MRI, echocardiographs, and ultrasound).	(74)
Pathology	The College of American Pathologists currently advocates on behalf of pathologists on a number of regulatory issues including: Medicare Payment for Pathology services, the Physician Quality Reporting System, SGR Reform, Restriction of physician self-referral arrangements, and exemption of pathologists from meaningful use.	(126)	Reimbursement for pathology services has decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased from 2012 levels by 6%. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 2%. In 2015, Medicare reimbursements under the PFS remained constant.	(83) (84) (85)	In 2015, only 605 of 891 applicants for pathology residencies were accepted.	(93)	Developments in toxicogenomics (that is, use of genomic techniques to evaluate pharmaceutical, chemical, or environmental substances and their potential toxicities), most specifically differential gene expression (DGE), may be pivotal to the technological advance of the field of pathology.	(75)

Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Physical Medicine and Rehab	Funding for research in physical medicine and rehabilitation has been limited, with National Institutes of Health funding in 2006 totaling $27,440,096, particularly when compared with internal medicine ($2,645,504,471), anesthesiology ($136,094,434), and family medicine ($54,250,863).	(76)	Reimbursement for physical medicine and rehab services has gradually decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased from 2012 levels by 4%. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 1%. In 2015, Medicare reimbursements under the PFS remained constant.	(83) (84) (85)	Rehabilitation treatment programs are often termed "interdisciplinary" for their use of many types of medical providers with levels of education and training ranging from physician specialists to paraprofessional staff. Specific providers commonly employed in rehabilitation include physiatrists, surgeons, rehabilitation nurses, physical therapists, occupational therapists, speech-language pathologists, respiratory therapists, recreation therapists, social workers, psychologists, and rehabilitation counselors.	(77)	Advances in wearable technology and web applications are improving physical medicine and rehabilitation for patients and enabling providers to better observe patient progress. There is also a wide variety of advanced rehabilitation methods for traumatic injuries, geriatrics, stroke, and cardiovascular surgery.	(104) (105)
Preventive Medicine	In 2013, the United States Preventive Services Task Force (USPSTF) issued a practice alert consisting of 26 recommendations on 16 various topics, where two screening procedures previously unsupported by evidence became firmly advocated and four interventions commonly practiced were recommended against. Clinicians must achieve recommended practice policies and are encouraged to concentrate on the provision of recommended services and to avoid services recommended against.	(78)	Under the ACA, insurance plans must provide a number of preventive services that are required to be covered without the patient needing to pay a copayment, coinsurance, or meet their deductible.	(125)	Residency space is limited for preventive medicine, but since it is a lesser-pursued field of medicine, the competition may be smaller than other medical residencies. In 2015, only 7 or 94 applicants for preventive medicine residencies were accepted.	(106) (93)	Advanced technology is leading to the creation of mobile apps and wearable devices that combine EHRs and physician support to create personalized medicine.	(107)

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Physician Specialty	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Psychiatry	Current legislation in Congress addresses federal mental health programs and the accessibility of care in an attempt to reform the public health delivery system.	(108)	Increased prescribing of psychotropic medication may be attributed in part to the change in mental health practices resulting from the shift toward managed care, which warrants lower physician fees and a redistribution of medical services to other mental health professionals.These financial disadvantages, paired with higher patient volumes that are expected to continue increasing in the anticipated demographic climate, confine psychiatrists to "managing pharmacologic treatments during brief visits."	(79) (80)	In 2015, only 1,353 of 2,445 applicants for categorical psychiatry residencies were accepted.Residency programs are fairly competitive for medical students and some practice specialties can be highly competitive, but there is a greater likelihood of finding job placement with a wide market search. Psychiatrists' main competition is psychologists, but psychologists' inability to prescribe medicine reduces the competitive threat of those practitioners.	(93) (109) (110)	Electronic prescribing via certified EHR is required for professionals to meet the meaningful use standards under the CMS EHR incentive programs.	(111)
Radiology	Many states have recently created their own legislation governing the requirements of professionals practicing in the field of radiology. Teleradiology regulations may affect physicians, as the new trend is for physicians to be licensed in both the state in which the image was taken as well as the state where the interpretation occurs.	(112) (113)	Reimbursement for radiology services has decreased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased from 2012 levels by 3%. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 2%. In 2015, Medicare reimbursements under the PFS decreased from 2014 levels by 1%. Payment for imaging services may be reduced based on the utilization rate of medical imaging equipment. For providers owning imaging equipment that costs over $1 million, any utilization rate lower than 90% will result in reimbursement penalties.	(83) (84) (85) (91)	The issue of in-office ancillary imaging pits radiologists against other providers such as cardiologists, orthopedists, podiatrists, and rheumatologists, who may self-refer diagnostic imaging services. Self-referral can lead to increased utilization of diagnostic imaging, which is of interest to reimbursement agencies and employers that pay for healthcare in the United States.	(81) (82)	Teleradiology is the latest innovation in the field and allows hospitals to send images via the internet to a team of highly skilled radiologists in other states or countries for interpretation. Teleradiology increases access to radiology services for hospitals in rural areas and hospitals that need 24-hour coverage.	(114)

Notes:

1 "Fewer Medical Students Choose Family Medicine in 2009 Match" By Barbara Bein, American Academy of Family Physicians, March 19, 2009, http://www.aafp.org/online/en/home/publications/news/news-now/resident-student-focus/20090319match.html (Accessed 3/27/09).

2 "Creating Health Care Jobs by Addressing Primary Care Workforce Needs" U.S. Department of Health and Human Services, March 23, 2015, http://www.hhs.gov/healthcare/facts/factsheets/2013/06/jobs06212012.html (Accessed 4/10/15).

3 "Can't find a Doctor? You're Not Alone" By Nancy Shute, U.S. News and World Report, March 19, 2008, http://health.usnews.com/articles/health/living-well- usn/2008/03/19/cant-find-a-doctor-youre-not-alone.html (Accessed 10/05/09); "Match Day: High-Paid Specialties Still IN, Primary Care Still Out" By Jacob Goldstein, Wall Street Journal Blogs, (March 19, 2009), http://blogs.wsj.com/health/2009/03/19/match-day-high-paid-specialties-still-in-primary-care-still-out/ (Accessed 03/27/09).

4 Ibid.

5 Ibid.

6 Ibid.

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Vision Problems in the U.S.	Vision Problems in the U.S. Database	"Vision Problems in the U.S. - Prevalence of Age-Related Eye Disease in America," Prevent Blindness America, 2015, www.visionproblemsus.org (Accessed 4/15/2015).	www.visionproblemsus.org
Henry J. Kaiser Family Foundation	"Kaiser is a non-profit organization focusing on national health issues, as well as the U.S. role in global health policy."	"About Us," The Henry J. Kaiser Family Foundation, 2015, www.kff.org/about-us/ (Accessed 4/13/2015).	www.kff.org
AMA Board of Trustees	"The AMA Board of Trustees ensures that the AMA remains focused on its essential reason for being: to promote the art and science of medicine and the betterment of public health."	"Board of Trustees," American Medical Association, 2015, http://www.ama-assn.org/ama/pub/about-ama/our-people/board-trustees.page? (Accessed 4/13/2015).	http://www.ama-assn.org/ama/pub/about-ama/our-people/board-trustees.page?

Associations

Type of Organization	Association	Description	Contact Information
National	Liaison Committee on Medical Education (LCME)	LCME is "recognized by the U.S. Department of Education as the reliable authority for the accreditation of medical education programs leading to the MD degree."	Barbara Barzansky, Ph.D., M.H.P.E. LCME Co-Secretary and Director, Undergraduate Medical Education lcme@aamc.org www.lcme.org
National	Commission on Osteopathic College Accreditation (COCA)	COCA "serves the public by establishing, maintaining, and applying accreditation standards and procedures to ensure that academic quality and continuous quality improvement delivered by the colleges of osteopathic medicine (COMs) reflect the evolving practice of osteopathic medicine. COCA is the only accrediting agency for predoctoral osteopathic medical education, and is recognized by the United States Department of Education (USDE)."	Andrea Williams, MA Interim Secretary, (2015) Commission on Osteopathic College Accreditation 142 East Ontario Street Chicago, IL 60611 www.osteopathic.org/index.cfm?PageID=acc_predoc
National	Accreditation Council for Graduate Medical Education (ACGME)	ACGME is "responsible for the accreditation of about 9,500 residency education programs."	Accreditation Council for Graduate Medical Education 515 North State Street, Suite 2000 Chicago, IL 60654 Phone: 312-755-5000 Fax: 312-755-7498 www.acgme.org
National	National Resident Matching Program (NRMP)	NRMP is a not-for-profit organization established in 1952 for the standardization of residency selection, and establishment of a uniform date of appointment to graduate medical education (GME) positions.	Phone: 866-617-5838 www.nrmp.org
National	Federal State Medical Boards (FSMB)	FSMB is a non-profit organization representing the 70 medical and osteopathic boards, "to promote excellence in medical practice, licensure, and regulation as the national resource and voice on behalf of state medical boards in their protection of the public."	Federal State Medical Boards 1300 Connecticut Avenue, NW Suite 500 Washington, D.C. 20036 Phone: (202) 463-4000 www.fsmb.org
National	National Board of Medical Examiners (NBME)	NBME is "an independent, not-for-profit organization that serves the public through its high- quality assessments of healthcare professionals."	National Board of Medical Examiners 3750 Market Street Philadelphia, PA 19104-3102 Phone: 215-590-9500 www.nbme.org/about/index.html
National	American Osteopathic Association (AOA)	The AOA is a professional association representing more than 110,000 osteopathic physicians and students, and "is the accrediting agency for all osteopathic medical schools and has federal authority to accredit hospitals and other health care facilities."	American Osteopathic Association 142 East Ontario Street Chicago, IL 60611-2864 Phone: 800-621-1773 www.osteopathic.org
National	American Medical Association (AMA)	The AMA is an association dedicated to "ensuring the sustainable physician practices that result in better health outcomes for patients."	American Medical Association AMA Plaza 330 N. Wabash Ave. Chicago, IL 60611-5885 (800) 621-8335 www.ama-assn.org

Type of Organization	Association	Description	Contact Information
National	The American Academy of Dermatology (AAD)	"With a membership of more than 17,000, [AAD] represents virtually all practicing dermatologists in the United States, as well as a growing number of international dermatologists."	The American Academy of Dermatology 930 E. Woodfield Road Schaumburg, IL 60173 Phone: 866-503-7546 www.aad.org/about-aad
National	American Academy of Family Physician (AAFP)	"The AAFP is committed to helping family physicians improve the health of Americans by advancing the specialty of family medicine, saving members' time, and maximizing the value of membership."	American Academy of Family Physician 11400 Tomahawk Creek Parkway Leawood, KS 66211-2680 http://www.aafp.org/about
National	The American Academy of Neurology (AAN)	"Founded in 1948, the AAN now represents more than 28,000 members and is dedicated to promoting the highest quality patient-centered care and enhancing member career satisfaction."	The American Academy of Neurology 201 Chicago Avenue Minneapolis, MN 55415 Phone: 800-879-1960 www.aan.com/go/foundation/about
National	American Academy of Ophthalmology (AAO)	"[AAO] is the largest national membership association of Eye MDs.," and is dedicated to "advance the lifelong learning and professional interests of ophthalmologists."	American Academy of Ophthalmology P.O. Box 7424 San Francisco, CA 94120-7424 Phone: 415-561-8500 www.aao.org
National	American Academy of Orthopaedic Surgeons (AAOS)	"Founded in 1933, the Academy is the preeminent provider of musculoskeletal education to orthopaedic surgeons and others in the world"	American Academy of Orthopaedic Surgeons 9400 West Higgins Road Rosemont, IL 60018 Phone: 847-823-7186 www.aaos.org/about/about.asp
National	The American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS)	"(AAO-HNS) is the world's largest organization representing specialists who treat the ear, nose, throat, and related structures of the head and neck."	The American Academy of Otolaryngology-Head and Neck Surgery 1650 Diagonal Road Alexandria, VA 22314-2857 Phone: 703-836-4444 www.entnet.org/aboutus
National	American Academy of Pediatrics (AAP)	AAP is "an organization of 62,000 pediatricians committed to the optimal physical, mental, and social health and well-being for all infants, children, adolescents, and young adults."	American Academy of Pediatrics 141 Northwest Point Blvd. Elk Grove Village, IL, 6000 Phone: 800-433-9016 www.aap.org/en-us/about-the-aap/Pages/About-the-AAP.aspx
National	The American Academy of Physical Medicine and Rehabilitation (AAPMR)	"Exclusively serving the needs of today's physical medicine and rehabilitation physician, the American Academy of Physical Medicine and Rehabilitation has over 8,000 members in the United States and abroad."	The American Academy of Physical Medicine and Rehabilitation 9700 West Bryn Mawr Avenue, Suite 200 Rosemont, IL 60018-5701 info@aapmr.org Phone: 847-737-6000 www.aapmr.org/about
National	American College of Emergency Physicians (ACEP)	The ACEP "supports quality emergency care and promotes the interests of emergency physicians."	American College of Emergency Physicians 1125 Executive Circle Irving, TX 75038-2522 membership@acep.org Phone: 972-550-0911 www.acep.org/aboutus
National	The American College of Medical Genetics (ACMG)	ACMG "is an organization composed of biochemical, clinical, cytogenetic, medical and molecular geneticists, genetic counselors and other health care professionals committed to the practice of medical genetics."	The American College of Medical Genetics 7220 Wisconsin Avenue, Suite 300 Bethesda, MD 20814 www.acmg.net

(continued)

Type of Organization	Association	Description	Contact Information
National	American College of Occupational and Environmental Medicine (ACOEM)	"Founded in 1916, ACOEM is the nation's largest medical society dedicated to promoting the health of workers through preventive medicine, clinical care, research, and education."	American College of Occupational and Environmental Medicine 25 Northwest Point Blvd. Suite 700 Elk Grove Village, IL 60007-1030 www.acoem.org/aboutACOEM.aspx
National	American College of Physicians (ACP)	"The American College of Physicians (ACP) is a national organization of internists — physician specialists who apply scientific knowledge and clinical expertise to the diagnosis, treatment, and compassionate care of adults across the spectrum from health to complex illness."	American College of Physicians 190 North Independence Mall West Philadelphia, PA 19106-1572 www.acponline.org/about_acp
National	American College of Preventive Medicine (ACPM)	"ACPM improves the health of individuals and populations through evidence-based health promotion, disease prevention, and systems-based approaches to improving health and health care."	American College of Preventive Medicine 455 Massachusetts Avenue NW, Suite 200 Washington, DC 20001 Phone: 202-466-2044 www.acpm.org/?WhoWeAre
National	The American College of Radiology (ACR)	ACR "is a professional medical society dedicated to serving patients and society by empowering radiology professionals to advance the practice, science and professions of radiological care."	The American College of Radiology 1891 Preston White Dr. Reston, VA 20191 http://www.acr.org/About-Us
National	American College of Surgeons (ACS)	The ACS is "to improve the quality of care for the surgical patient by setting high standards for surgical education and practice."	American College of Surgeons 633 N Saint Clair Street Chicago, IL 60611-3211 www.facs.org/about-acs
National	American Medical Informatics Association (AMIA)	AMIA is "the professional home of leading informaticians: clinicians, scientists, researchers, educators, students, and other informatics professionals who rely on data to connect people, information, and technology."	American Medical Informatics Association 4720 Montgomery Lane, Suite 500 Bethesda, Maryland 20814 https://www.amia.org/about-amia
National	American Psychiatric Association (APA)	APA's "member physicians work together to ensure humane care and effective treatment for all persons with mental disorders, including mental retardation and substance use disorders."	American Psychiatric Associatio 1000 Wilson Boulevard Suite 1825 Arlington, VA 22209 http://www.psychiatry.org/about-apa--psychiatry
National	American Society for Clinical Pathology (ASCP)	"The mission of the American Society for Clinical Pathology is to provide excellence in education, certification, and advocacy on behalf of patients, pathologists, and laboratory professionals."	American Society for Clinical Pathology 33 West Monroe Street Suite 1600 Chicago, IL 60603 www.ascp.org/About-the-ASCP
National	American Society for Reproductive Medicine (ASRM)	ASRM is a voluntary, non-profit organization devoted "to be the nationally and internationally recognized leader for multidisciplinary information, education, advocacy and standards in the field of reproductive medicine."	American Society for Reproductive Medicine 1209 Montgomery Highway Birmingham, AL 35216-2809 www.asrm.org/about

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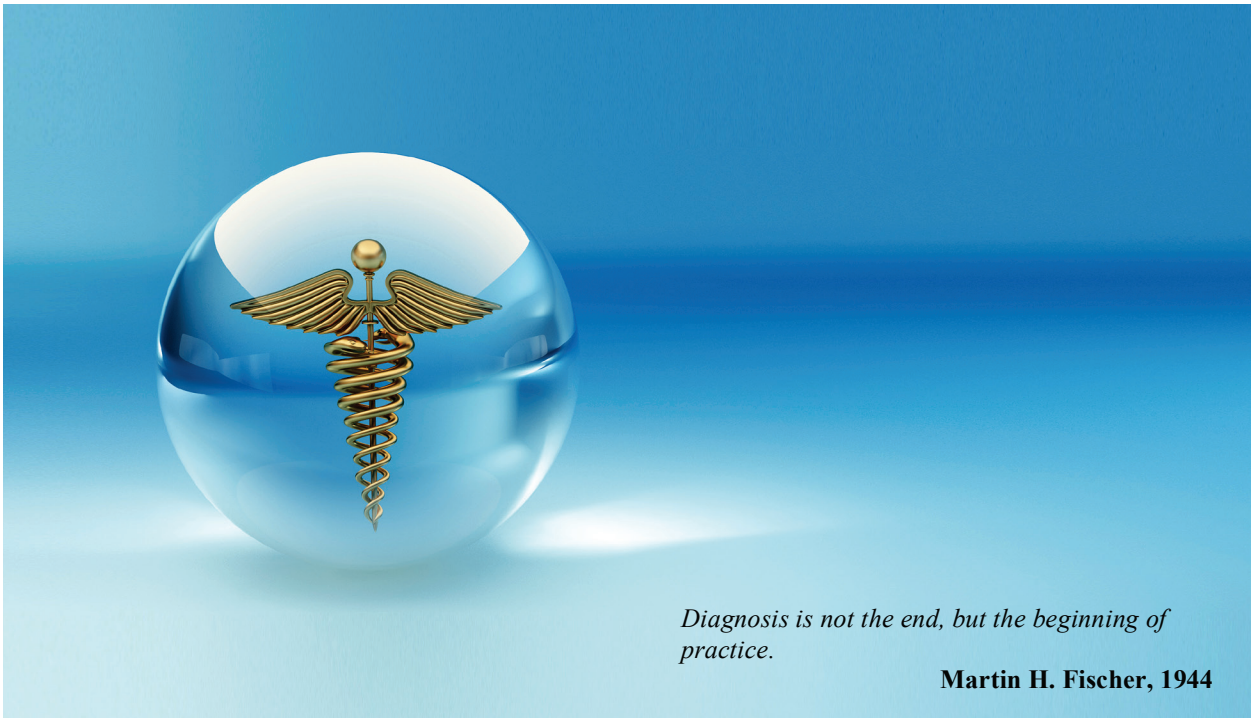
Type of Organization	Association	Description	Contact Information
National	Eye Bank Association of America (EBAA)	"The EBAA champions the restoration of sight through core services to its members which advance donation, transplantation and research in their communities and throughout the world."	Eye Bank Association of America 1015 Eighteenth Street NW Suite 1010 Washington, DC 20036 www.restoresight.org
National	American Society for Aesthetic Plastic Surgery (ASAPS)	ASAPS "is the leading professional organization of plastic surgeons certified by the American Board of Plastic Surgery who specialize in cosmetic plastic surgery. With over 2,600 members in the U.S., Canada, and many other countries, ASAPS is at the forefront of innovation in aesthetic plastic surgery around the world."	American Society for Aesthetic Plastic Surgery 11262 Monarch Street Garden Grove, CA 92841 Phone: 800-364-2147 asaps@surgery.org www.surgery.org
National	Council of Medical Specialty Societies (CMSS)	CMSS is a 501(c)(3) not-for-profit association established to "provide a respected and influential voice for medical specialty societies and their members by working with the societies and other medical organizations to formulate, articulate and promote adoption of policies that will improve the U.S. healthcare system and health of the public."	Council of Medical Specialty Societies 35 E. Wacker Dr., Suite 850 Chicago, IL 60601-2106 Phone: 312-224-2585 mailbox@cmss.org www.cmss.org

Chapter 8

Mid-Level Provider Practices



Diagnosis is not the end, but the beginning of practice.

Martin H. Fischer, 1944

KEY TERMS

Advanced Dental Hygiene Practitioners (ADHPs)
Advanced Practice Registered Nurses (APRNs)
Audiologists
Certified Nurse-Midwives (CNMs)
Certified Registered Nurse Anesthetists (CRNAs)
Clinical Nurse Specialists (CNSs)
Dental Hygienists
Incident-To Billing (Medicare)
Mid-Level Providers
Nurse Practitioners (NPs)
Occupational Therapist Registered
Occupational Therapists
Opticians
Orthotists
Pharmacists
Physical Therapists (PTs)
Physician Assistants (PAs)
Prosthetists
Registered Dietitians (RD)
Registered Pharmacist (RPhs)
Rehabilitation Therapists
Speech-Language Pathologists

Key Concept	Definition	Citation	Concept Mentioned on Page #
Mid-Level Provider Scope of Practice	The scope of practice for mid-level providers varies by specialty, but several have responsibilities that resemble or overlap with those traditionally expected of physicians, although arbitrarily limited according to state law.	"Interprofessional Healthcare: A Common Taxonomy to Assist with Understanding" By Alice B. Aiken and Mary Ann McColl, Journal of Allied Health, Vol. 38, No. 3 (Fall 2009), p. e-94.	474
Mid-Level Providers Versus Technicians	The degree of autonomy as a practitioner differentiates mid-level providers from technicians and other healthcare paraprofessionals, the latter who cannot be considered independent providers under any circumstance.	n/a	474
Mid-Level Provider Autonomy Through Medicare Reimbursement	Services billed under Medicare "incident-to" rules allow nonphysician providers to work without direct supervision (that is, without a physician in the room) by any licensed physician, regardless of specialty or whether he or she provided the primary service to the patient.	"'Incident to' Services" Centers for Medicare & Medicaid Services, April 9, 2013, https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/se0441.pdf (Accessed 4/7/2015), p. 1.	476
Scope of Practice for Physician Assistants (PAs)	The scope of practice for PAs is regulated by education and experience, facility policy, decisions made by overseeing physicians, and state law. Comprehensive treatments may include invasive and noninvasive therapies, prescription of medication, and the utilization of diagnostic procedures.	"Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/2015); "State Laws and Regulations" American Academy of Physician Assistants, https://www.aapa.org/threecolumnlanding.aspx?id=304 (Accessed 4/9/15).	478
Scope of Practice for Advanced Practice Registered Nurses (APRNs)	APRNs, in addition to specialty education, receive sufficient training in the autonomous provision of diagnostic and therapeutic services, and they are authorized to prescribe medication in all states and the District of Columbia.	"Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/2015).	481
APRN Specializations	The four APRN specialties are clinical nurse specialists, nurse anesthetists, nurse-midwives, and nurse practitioners.	"Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/registered-nurses.htm (Accessed 4/2/2015).	481
Scope of Practice for Certified Registered Nurse Anesthetists (CRNAs)	CRNAs practice parameters include, but are not limited to, pre-anesthetic assessment and evaluation, development and execution of anesthesia administration plans, observation and management of patient vitals during plan execution, control of patient emergence and recovery from anesthesia, release and discharge of patients who have been placed in post-anesthesia care, provision of follow-up services, management of pain relief therapy programs, emergency response, and the selection, acquisition, and administration of drugs, monitoring modalities, or therapies associated with all of these services.	"Qualifications and Capabilities of the Certified Registered Nurse Anesthetist," American Association of Nurse Anesthetists, August 22, 2008, www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (accessed November 2, 2009).	487

Key Concept	Definition	Citation	Concept Mentioned on Page #
Scope of Practice for Nurse Practitioners (NPs)	NPs are afforded a tremendous degree of autonomy and flexibility in their specialty and subspecialty options when providing primary, ambulatory, acute, and long-term care services, thus, their services span the "wellness-illness continuum."	"Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education," Advanced Practice Registered Nurses (APRN) Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, July 7, 2008, http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (accessed November 3, 2009), p. 8; "Frequently Asked Questions: Why Choose a Nurse Practitioner as your Healthcare Provider?" American Academy of Nurse Practitioners, 2007, http://www.npfinder.com/faq.pdf (Accessed 11/3/09).	490
Scope of Practice for Clinical Nurse Specialists (CNSs)	CNSs are proficient in a specific area of nursing practice described as it relates to population, setting, disease or subspecialty of medicine, kind of care, or problem-base in a variety of healthcare settings.	"FAQ's: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, 2009, www.nacns.org/AboutNACNS/FAQs/tabid/109/Default.aspx (accessed November 2, 2009).	493
Scope of Practice for Certified Nurse-Midwives (CNMs)	CNMs work independent of, in collaboration with, or as consult to other healthcare professionals in an effort to provide comprehensive care to women. Beyond care surrounding pregnancy and delivery, they perform prenatal care, delivery services, post-delivery care, infant care, annual women's health exams, birth control services, menopause services, and an array of counseling services. CNMs work in the hospital setting as well as in freestanding birth centers and the home.	"Midwifery Certification in the United States," American College of Nurse Midwives, Position Statement, March 2009, www.midwife.org/siteFiles/position/Midwifery Certification_in_the_United_States_3_31_09.pdf (accessed November 4, 2009); "Share with Women," American College of Nurse Midwives, Journal of Midwifery and Women's Health, Volume 51, Number 5, (September/October 2006), p. 385.	495
Certified Midwife (CM)	Training to be a CM is available and legally sanctioned in five states. This route of education and certification bypasses the nursing training entirely; however, CM education is recognized by the American College of Nurse-Midwives as preparing practitioners "to meet the same high standards that certified nurse-midwives must meet."	"Become a Midwife," American College of Nurse-Midwives, 2009, www.mymidwife.org/becoming_mw.cfm (accessed November 3, 2009); "Midwifery Certification in the United States," American College of Nurse Midwives, Position Statement, March 2009, www.midwife.org/siteFiles/position/MidwiferyCertification_in_the_United_States_3_31_09.pdf (accessed November 4, 2009).	496
Rehabilitation Therapists Scope of Practice	Rehabilitation therapists are expected to provide services that align with certain general practice parameters, including the continual evaluation of progress, the setting of goals and treatment plans catered to the needs of a specific patient, the assessment of the outcomes of treatment, the instruction of patients on how to improve their condition, and the ability to be knowledgeable and proficient in rehabilitative devices.	"Medicare Claims Processing Manual: Chapter 5 - Part B Outpatient Rehabilitation and CORF/OPT Services" Centers for Medicare & Medicaid Services, Marblehead, MA: HCPro, Inc., December 18, 2009, http://www.cms.hhs.gov/manuals/downloads/clm104c05.pdf (Accessed 11/11/09).	498

(continued)

Key Concept	Definition	Citation	Concept Mentioned on Page #
Types of Rehabilitation Therapists	Three mainstream therapy professions fall under the scope described by the Centers for Medicare and Medicaid Services: physical therapy, occupational therapy, and speech-language pathology.	"Medicare Claims Processing Manual: Chapter 5 - Part B Outpatient Rehabilitation and CORF/OPT Services" Centers for Medicare & Medicaid Services, Marblehead, MA: HCPro, Inc., December 18, 2009, http://www.cms.hhs.gov/manuals/downloads/clm104c05.pdf (Accessed 11/11/09).	499
Scope of Practice for Registered Dietitians (RDs)	RDs can practice in hospitals, health maintenance organizations, private healthcare offices, facilities that house sports nutrition and wellness programs, food and nutrition companies, the community-based public health field, universities, medical centers, and research groups focusing on clinical, community, management, consulting dietetics, or a combination of these. Also, RDs can work in business, public health, education, research, and private practice.	"Educational and Professional Requirements," American Dietetic Association, July 2009, www.eatright.org/cps/rde/xchg/ada/hs.xsl/CADE_748_ENU_HTML.htm (accessed November 4, 2009); "Occupational Outlook Handbook: Dietitians and Nutritionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dietitians-and-nutritionists.htm (Accessed 4/3/2015).	503
Scope of Practice for Dental Hygienists	Dental hygienists perform cleaning, screening, preventive, educational, diagnostic, assistive, and, sometimes, therapeutic services. They are authorized to assess oral conditions, document and evaluate health histories, and screen the mouth, head, and neck for diseases and conditions, including those related to cancer. Dental hygienists prepare diagnostic tests for dentist interpretation and, sometimes, interpret the results themselves.	"Dental Team Careers: Dental Hygienist" American Dental Association, 2010, http://www.ada.org/357.aspx (Accessed 05/23/10); "Occupational Outlook Handbook: Dental Hygenists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dental-hygienists.htm (Accessed 4/3/2015).	506
Scope of Practice for Pharmacists	Pharmacists provide an array of primary care and consulting services in a variety of settings. In addition to dispensing drugs, pharmacists counsel patients and providers, monitor patient progress, complete paper work for third-party insurers, and "compound" or mix the pharmaceutical ingredients that constitute a given medication.	"Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/2015).	509
Scope of Practice for Orthotists and Prosthetists	The scope of prosthetic and orthotic practice is comprised (not exclusively) of five key components: assessing and managing clinical patients, implementing technical devices, managing practices, and assuming professional responsibility for the care they provide.	"Orthotist and Prosthetist," The Commission on Accreditation of Allied Health Education Programs, 2009, www.caahep.org/Content.aspx?ID=45 (accessed November 10, 2009).	512
Scope of Practice for Opticians	Dispensing opticians assist clients in finding and customizing eyeglasses and contact lenses to meet their prescriptive, comfort, and personal needs. Some opticians grind and insert lenses into frames on the basis of selected size, material, and style; others simply prepare the work orders and issue them to ophthalmic technicians.	"Occupational Outlook Handbook: Opticians, Dispensing" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/opticians-dispensing.htm (Accessed 4/3/2015).	516
The Future of Mid Level Providers	With the expected growth in the mid-level provider workforce, providing the number of providers needed to enhance physician productivity, as well as the expansion of mid-level provider roles in providing care, it is possible that the manpower shortage may be met.	"The Complexities of Physician Supply and Demand: Projections Through 2025: Executive Summary" Center for Workforce Studies of the Association of American Medical Colleges, http://www.aamc.org/workforce (Accessed 05/06/10), p. 7.	518

OVERVIEW

The ongoing physician shortage, paired with declining reimbursement rates, has fueled demand for a cost effective means of provider manpower relief. To meet this demand, the healthcare workforce has continued to diversify, with a versatile new evolution no longer limited to the horizontal expansion of specialty and subspecialty areas of medical expertise. Currently, trends have shifted toward a vertical expansion of the role of the non-physician workforce in providing professional medical services that support, supplement, and parallel physician services. While Chapter 10, *Allied Health Professionals*, will discuss non-physician professionals who typically provide services that parallel physician services and Chapter 9, *Technicians and Paraprofessionals*, will focus on the role of certain non-physician professionals in the provision of physician-support services, this chapter's focuses will be on *mid-level providers*, a class of non-physician professional practitioners who lie in the midst of these two extremes. The mid-level provider class is derived from the *triage model* (discussed in the *Introduction of an Era of Reform—The Four Pillars*) of intraprofessional care. Mid-level providers are afforded a significant level of autonomy within their scope of practice, which authorizes them to act incident-to and *in lieu* of physicians, under certain conditions, in the provision of previously determined services. At the time of publication, these licensed, non-physician practitioners are capable of providing a spectra of intermediate healthcare services and, consistent with the triage model, any complex cases that lie outside their scope of practice are passed on to physicians for more extensive care.[1] The degree of practice autonomy differs for each type of mid-level provider and typically is mandated on a state-by-state basis.[2]

> Due to the looming physician shortage, many healthcare providers are turning to nonphysician clinical practitioners to fill the gap in patient care created by the workforce shortage, especially in primary care, which could be accomplished by cementing the role of mid-level providers as physician extenders.
>
> ***Miranda Laurant et al.,.***

Changes in the role of mid-level providers within the ever-evolving continuum of care are driven by various transformations in the regulatory, reimbursement, competitive, and technology environments of the medical profession. As the healthcare industry continues to reform, questions regarding the scope and practice of mid-level providers are becoming increasingly important. Although nurse practitioners and physician assistants have pioneered this subset of non-physician professional practice, in recent years, the designation of mid-level provider has been expanded to encompass many other non-physician clinical practitioners (for example, advanced practice registered nurses, therapists, dietitians, dental hygienists, opticians, pharmacists, and so forth).[3]

1 "Interprofessional Healthcare: A Common Taxonomy to Assist with Understanding" By Alice B. Aiken and Mary Ann McColl, Journal of Allied Health, Vol. 38, No. 3 (Fall 2009), p. e-94.

2 "Report of the Council on Medical Service: Ratio of Physician to Physician Extenders" By Kay K. Hanley, Report for Michael Tenner, December 1998, p. 1-2.

3 "Report of the Council on Medical Service: Ratio of Physician to Physician Extenders" By Kay K. Hanley, Report for Michael Tenner, December 1998, p. 1.

DESCRIPTION AND SCOPE

Mid-level providers are a subset of licensed non-physician practitioners who are afforded autonomy within a clearly demarcated scope of practice and who thereby supplement physicians in the provision of select billable services. A unique scope of practice is attributed to each type of mid-level provider that varies on the basis of practice setting and the types of services that they perform.[4] Despite the recent expansion of mid-level providers' professional autonomy, their role in supporting physician providers remains particularly significant,[5] with many mid-level practitioners providing specialized manpower support to aid in the provision of physician services rather than independently providing billable services that generate revenue. The distinction between permitted and practiced scope of service is an underlying cause of the debates regarding the regulation and reimbursement of non-physician practitioners. As a consequence, mid-level provider scope of practice is still somewhat limited under states' laws.

However, due to the increasingly dire physician shortage, non-physician providers have continued to be implemented strategically in increasingly diverse roles in an attempt to bolster a healthcare workforce that is in desperate need of reform. Healthcare analysts expect that physicians will turn to mid-level practitioners to fill the gap created by the workforce shortage, becoming primary (potentially, even *principal*) care providers in the care area.[6]

Mid-Level Provider Criteria

As the role of mid-level providers continues to expand in the medical workforce, it becomes increasingly important to define the limits and criteria of what classifies a healthcare professional as a mid-level provider. For the purposes of this *Guide*, mid-level providers are health practitioners who *must hold a license* to practice medicine and *may (in some capacity) practice independently*. The level of practice autonomy afforded to mid-level providers distinguishes them from technicians and paraprofessionals, who may or may not be licensed but who cannot practice independently under any circumstances.[7]

INDUSTRY TRENDS

The mid-level provider population is expected to continue growing in scope and volume. The population of physician assistants in the U.S. grew 219% from 2003-2013, and by 2014, the number of nurse practitioners in the U.S. had surpassed 200,000.[8] The scope of utilization of

4 "Understanding Scope of Practice" By Shelly K. Schwartz, Physicians Practice, April 1, 2010, http://www.physicianspractice.com/articles/understanding-scope-practice (Accessed 4/7/15).

5 "The Impact of Non-Physician Clinicians: Do they Improve the Quality and Cost-Effectiveness of Health Care Services?" By Miranda Laurant et al., Medical Care Research and Review, Vol. 66, No. 6 (2009), p. 40S.

6 "The Complexities of Physician Supply and Demand: Projections Through 2025: Executive Summary" Center for Workforce Studies of the Association of American Medical Colleges, http://www.aamc.org/workforce (Accessed 05/06/10).71; "The Impact of Non-Physician Clinicians: Do they Improve the Quality and Cost-Effectiveness of Health Care Services?" By Miranda Laurant, et al., Medical Care Research and Review, Vol. 66, No. 6 (2009), p. 40S, 84S-85S.

7 See chapter 9, *Technician and Paraprofessional Criteria*.

8 "2013 Statistical Profile of Certified Physician Assistants" National Commission on Certification of Physician Assistants, July 2014, https://www.nccpa.net/Upload/PDFs/2013StatisticalProfileofCertifiedPhysicianAssistants-AnAnnualReportoftheNCCPA.pdf (Accessed 4/2/15), p. 5; "NP Fact Sheet" American Association of Nurse Practitioners, March 2015, http://www.aanp.org/all-about-nps/np-fact-sheet (Accessed 4/2/15).

mid-level providers has increased as well. From 2000 to 2011, the share of hospital outpatient department visits handled exclusively by mid-level providers (i.e., the patient did not see a physician during the visit) grew from 10% to 23%.[9] Furthermore, patients in hospital outpatient departments are more likely to be treated by mid-level providers if the purpose of the visit is to seek care for a new problem, in comparison to visits for chronic conditions or pre- or post-surgical care.[10]

> Approximately 40% of the Medicare billed services by physicians exceeding a twenty-four-hour workday were actually performed by qualified nonphysicians, such as mid-level providers.
>
> ***Office of the Inspector General, August 2009.***

A study conducted by the Office of the Inspector General (OIG) corroborated this trend in more recent years, reporting that approximately 40% of Medicare-billed physician services that exceeded a twenty-four-hour workday actually were performed by qualified nonphysician practitioners, that is, mid-level providers.[11] The services provided by nonphysician clinicians (both qualified and nonqualified) during a three-month period accounted for approximately $85 million in Medicare claims.[12] As healthcare demand continues to increase, the role and utility of mid-level practitioners is likely to grow as well.

FOUR PILLARS

As mentioned previously, it is imperative to consider the practice of mid-level providers within the context of the four pillars. Changes in the healthcare regulatory and reimbursement environments may have a substantial effect on the scope of mid-level provider practice, and they may reinforce their role in the provision of services, either incident-to, or *in lieu* of, physicians. Additionally, as the role of the mid-level provider changes, practitioners may be required to master the use of advanced technologies and the provision of specialized services that may have been excluded from their original scope of practice. For highlights in the Four Pillars for each Mid-Level Provider type, please see table 8-1, at the end of this Chapter.

Regulatory

The most predominant regulatory question pending for mid-level providers is the level of physician supervision that is required and regulated by state and federal law. Although supervision and scope requirements differ for each type of mid-level provider, *incident-to* services billed under Medicare (discussed in the following section, *Reimbursement*) allow

9 "Physician Assistant and Advance Practice Nurse Care in Hospital Outpatient Departments: United States, 2008-2009" By Esther Hing, MPH and Sayeedha Uddin, MD, MPH, Centers for Disease Control and Prevention, NCHS Data Brief, No. 77 (November 2011), http://www.cdc.gov/nchs/data/databriefs/db77.pdf (Accessed 4/2/15), p. 1; "National Hospital Ambulatory Medical Care Survey: 2011 Outpatient Department Summary Tables" Centers for Disease Control and Prevention, March 2015, http://www.cdc.gov/nchs/data/ahcd/nhamcs_outpatient/2011_opd_web_tables.pdf (Accessed 4/2/15), Table 22.

10 "Physician Assistant and Advance Practice Nurse Care in Hospital Outpatient Departments: United States, 2008-2009" By Esther Hing, MPH and Sayeedha Uddin, MD, MPH, Centers for Disease Control and Prevention, NCHS Data Brief, No. 77 (November 2011), http://www.cdc.gov/nchs/data/databriefs/db77.pdf (Accessed 4/2/15), p. 1.

11 "Prevalence and Qualifications of Nonphysicians Who Performed Medicare Physician Services" Office of the Inspector General, Report OEI 09-06-00430, Washington D.C.: Department of Health and Human Services, August 2009, oig.hhs.gov/oei/reports/oei-09-06-00430.pdf (Accessed 5/28/10), p. 16.

12 Ibid, p. 8.

non-physician providers to provide services, without the direct supervision of a *present* licensed physician, regardless of the physician's specialty or whether they are acting as primary care providers.[13] In contrast, state laws differ widely with regard to supervision requirements, as well as the responsibilities and tasks delegated to mid-level providers.[14] The final rules of the 2010 Outpatient Prospective Payment System (OPPS) and Medicare physician fee schedule (MPFS) served a multifaceted role in the regulation of mid-level providers by imposing more stringent supervision requirements upon some and relegating accountability for the supervision of select diagnostic and therapeutic services to others.[15]

Reimbursement

Because non-physician providers are not afforded absolute autonomy, management of reimbursement for clinical services furnished by mid-level providers may be a financial concern for healthcare professional practices. For Medicare, physicians can bill for services provided by mid-level providers as *incident-to services,* wherein the physician performs an initial service, and then the mid-level provider furnishes services that are part of a patient's normal course of treatment while under the physician's *direct supervision* (i.e., the physician must be present in the office in order to provide assistance if necessary).[16] When another provider furnishes incident-to services, the physician may bill for said services under the normal physician fee schedule, as if the physician had provided the services themselves.[17] Alternately, some mid-level providers, i.e., physician assistants, nurse practitioners, and clinical nurse specialists, also have the ability to act as independent contractors and bill directly for their services at 80% of the lesser of the actual charge or 85% of the standard physician fee schedule payment.[18] Additionally, the final rules of the 2010 OPPS and MPFS modified supervision requirements for in-hospital outpatient services to authorize certain mid-level providers (for example, physician assistants, nurse practitioners, clinical nurse specialists, and certified nurse-midwives), as well as other qualified non-physician practitioners, in the supervision of outpatient diagnostic *and* therapeutic services that fall within their scope of practice.[19]

Despite the relative freedom given to some mid-level providers with regard to payment options under Medicare, practice limitations still exist in some settings. According to the 2010 OPPS final rule, Centers for Medicare and Medicaid Services' (CMS) standard for supervision of therapy services states that physician or non-physician supervisors must be immediately available in settings in which therapists are providing care.[20] The accountable providers may be

13 "The Ins and Outs of "Incident-To" Reimbursement" By Alice G. Gosfield, Family Practice Management, Vol. 8, No. 10 (November/December 2001), p. 24-25.

14 "Report of the Council on Medical Service: Ratio of Physician to Physician Extenders" By Kay K. Hanley, Report for Michael Tenner, December 1998, p. 1-2.

15 "Medicare Program: Changes to the Hospital Outpatient Prospective Payment System and CY 2010 Payment Rates; Changes to the Ambulatory Surgical Center Payment System and CY 2010 Payment Rates" Federal Register Vol. 74, No. 223, (November 20, 2009) p. 60578, 60587-60591.

16 "'Incident to' Services" Centers for Medicare & Medicaid Services, April 9, 2013, https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/se0441.pdf (Accessed 4/7/15), p. 1.

17 Ibid.

18 "Medicare Claims Processing Manual: Chapter 12 – Physicians/Nonphysician Practitioners" Centers for Medicare & Medicaid Services, October 17, 2014, §§ 110, 120.

19 "Medicare Program: Changes to the Hospital Outpatient Prospective Payment System and CY 2010 Payment Rates; Changes to the Ambulatory Surgical Center Payment System and CY 2010 Payment Rates" Federal Register Vol. 74, No. 223, (November 20, 2009) p. 60578, 60587-60591.

20 "CMS Finalizes Changes to Physician Supervision Requirements" Health Information Management, Briefings on APCs, Vol. 11, No. 1 (January 1, 2010), p. 4; "Medicare Program: Changes to the Hospital Outpatient Prospective Payment System and CY 2010 Payment Rates; Changes to the Ambulatory Surgical Center Payment System and CY 2010 Payment Rates" Federal Register Vol. 74, No. 223, (November 20, 2009) p. 60578, 60587-60591.

located anywhere on the hospital campus, as long as they are immediately available to provide assistance if needed.[21]

Competition

Although mid-level providers face some competition from other non-physician clinicians (for example, technicians and paraprofessionals), their primary competitors continue to be physicians due to their overlapping scopes of practice and recent industry trends. The degree of separation between services provided by physician and mid-level providers varies based on the specific type of professional, the practice setting in question, and the particular state regulations governing the scope of practice and the supervision of mid-level providers.[22] In response to the predicted shortage in the physician workforce, the decision of whether non-physician clinicians, such as mid-level providers, will continue to be utilized as physician extenders or as an addition to the physician workforce will determine whether their relationship with physicians will be complementary or competitive in nature.

Technology

Industry advances in technology have inadvertently forced mid-level providers to expand their level of technological capability, which has increased their marketability and aptitude as independent practitioners. To maintain pace with new developments in the scope of mid-level provider practices, practitioners must stay abreast of newer technologies to remain a competitive force in the marketplace.

MID-LEVEL PROVIDERS OF CLINICAL SERVICES

PHYSICIAN ASSISTANTS (PAS)

Description and Scope

Physician assistants (PAs) are licensed health professionals who practice medicine under the supervision of physicians, surgeons, or both.[23] PAs perform services delegated by supervising physicians.[24] However, in urban or rural settings suffering from physician shortages, PAs may stand in as principal care providers.[25] In situations in which PAs are the principal care providers,

21 Ibid.
22 "Report of the Council on Medical Service: Ratio of Physician to Physician Extenders" By Kay K. Hanley, Report for Michael Tenner, December 1998, p. 1-2.
23 "Becoming A Physician Assistant" American Academy of Physician Assistants, 2009, http://www.aapa.org/about-pas/becoming-a-physician-assistant (Accessed 08/13/09); "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
24 "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
25 Ibid.

they confer with supervising physicians or other members of the medical staff, as state law dictates.[26]

> In urban or rural settings suffering from physician shortages, PAs may stand in as "principal care providers," conferring with supervising physicians or other members of the medical staff, as state law dictates.
>
> ***Bureau of Labor Statistics, January 8, 2014.***

Scope

PAs perform a multitude of medical duties from providing primary care services to performing specialty procedures.[27] Physician assistants often review patient medical histories, conduct physical exams, order and interpret diagnostic tests, diagnose injuries or illnesses, and prescribe medications.[28] The scope of practice for PAs is regulated by their education and experience, facility policy, the decisions made by the overseeing physicians, and as mandated by state law.[29]

Education and Training

In order to apply to a PA educational program, an applicant must have completed at least two years of college courses focusing on basic and behavioral sciences.[30] The Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) is the accrediting agency recognized by the Council for Higher Education Accreditation (CHEA); it is also a member of the Association of Specialized and Professional Accreditors.[31] At the time of publication, ARC-PA recognized more than 190 PA programs, most of which existed within schools of allied health, academic health centers, medical schools, and four-year universities.[32] Most programs are approximately 26 months in duration and train students in students in basic sciences, behavioral sciences, and clinical medicine.[33]

> Most of the more than 190 accredited PA programs exist within schools of allied health, academic health centers, medical schools, or four-year universities.
>
> ***Accreditation Review Commission on Education for the Physician Assistant, Inc., April 2, 2015.***

In addition to receiving the training needed to achieve PA professional designation, candidates are afforded several degree options, with 178 programs awarding master's degrees, six awarding baccalaureate degrees, two awarding associate degrees, and four awarding certificates as their

26 Ibid.
27 "Becoming A Physician Assistant" American Academy of Physician Assistants, 2009, http://www.aapa.org/about-pas/becoming-a-physician-assistant (Accessed 08/13/09).
28 "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
29 "PA Scope of Practice" American Academy of Physician Assistants, Issue Brief (November 2008), http://www.aapa.org/advocacy-and-practice-resources/state-government-and-licensing/issues/scope-of-practice/548 (Accessed 1/27/10), p. 2-3.
30 "Physician Assistant Education – Preparation for Excellence" American Academy of Physician Assistants, March 2011, https://www.aapa.org/WorkArea/DownloadAsset.aspx?id=580 (Accessed 4/7/15), p. 1.
31 "Accreditation Review Commission on Education for the Physician Assistant" ARC-PA, http://www.arc-pa.org/ (Accessed 11/13/09).
32 "Accredited PA Programs" Accreditation Review Commission on Education for the Physician Assistant, Inc., April 2, 2015, http://www.arc-pa.org/acc_programs/ (Accessed 4/2/15).
33 "What Is a PA?" American Academy of Physician Assistants, https://www.aapa.org/landingquestion.aspx?id=290 (Accessed 4/9/15).

highest credentials available.[34] Prerequisites for admission into a PA program vary accordingly, although almost all candidates must have prior experience in healthcare; those pursuing baccalaureate degrees must complete two years of college, and those pursuing a master's degree must have an undergraduate education.[35] In both cases, candidates must pursue ample coursework (credit hour requirements vary by institution) in biological, chemical, and social sciences; English; mathematics; and psychology.[36]

After completing PA training through an accredited program, new PAs are required to pass the Physician Assistant National Certifying Exam, which is administered by the National Commission on Certification of Physician Assistants (NCCPA).[37] Practitioners certified by the NCCPA are awarded the professional designation "Physician Assistant-Certified."[38]

All fifty states and the District of Columbia have legislation regulating the qualifications or practice of PAs.[39] Specifically, all states require that all practicing physician assistants are licensed by the NCCPA, which in turn requires 100 hours of continuing education every two years and recertification every ten years.[40] However, state laws and regulations may have different expectations and requirements with regard to licensure and scope of practice.[41] For up-to-date information on state laws regarding physician assistants, visit the AAPA's website at www.aapa.org.[42]

Specialties

Regardless of the varying degrees of applied autonomy exercised across different practice settings, PAs are delegated, or may assume, their own scope of practice in nearly all medical and surgical specialties.[43] PA services are subdivided into six general areas of practice: primary care, surgical practice, emergency medicine, internal medicine subspecialties, pediatric subspecialties, and other specialties (for example, addiction medicine, anesthesiology, dermatology, hospital medicine, occupational medicine, oncology, psychiatry, and radiology).[44]

34 "Program Data" Accreditation Review Commission on Education for Physician Assistant, October 2014, http://www.arc-pa.org/acc_programs/program_data.html (Accessed 4/9/15).
35 "Becoming A Physician Assistant" American Academy of Physician Assistants, 2009, http://www.aapa.org/about-pas/becoming-a-physician-assistant (Accessed 08/13/09).
36 Ibid.
37 "Becoming A Physician Assistant" American Academy of Physician Assistants, 2009, http://www.aapa.org/about-pas/becoming-a-physician-assistant (Accessed 08/13/09); "Certification Exams" National Commission on Certification of Physician Assistants, http://www.nccpa.net/Exams.aspx (Accessed 12/07/09).
38 "Welcome to the NCCPA" National Commission on Certification of Physician Assistants, 2009, http://www.nccpa.net/ (Accessed 08/18/09).
39 "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
40 Ibid.
41 "Summary of State Laws for Physician Assistants: Abridged Version" American Academy of Physician Assistants, July 2009, http://www.aapa.org/advocacy-and-practice-resources/state-government-and-licensing/state-laws-and-regulations/517-summary-of-state-laws-for-physician-assistants-abridged-version (Accessed 1/27/10).
42 Ibid.
43 "Specialty Practice" American Academy of Physician Assistants, http://www.aapa.org/advocacy-and-practice-resources/practice-resources/specialty-practice (Accessed 1/27/10).
44 "All Other Specialties" American Academy of Physician Assistants, 2008, http://www.aapa.org/advocacy-and-practice-resources/practice-resources/specialty-practice/599-all-other-specialties (Accessed 01/27/10); "Specialty Practice" American Academy of Physician Assistants, http://www.aapa.org/advocacy-and-practice-resources/practice-resources/specialty-practice (Accessed 1/27/10).

Industry Trends

Characteristics and Distribution

In 2012, there were approximately 86,700 physician assistants, with more than half practicing in the offices of physicians and approximately 23% employed by hospitals.[45] In 2010, the AAPA found that 33% of PAs practiced in primary care specialties: family medicine (24%), general internal medicine (5%), general pediatrics (2%), and obstetrics and gynecology (2%). Other areas with large PA volume included surgery and surgical subspecialties (26%), emergency medicine (11%), and internal medicine subspecialties (10%).[46]

A 2013 survey found that, demographically, certified PAs are predominantly white (86% of respondents), female (66% of respondents), and between the ages of 30 and 39 (36% of respondents), with a median age of 38.[47] Furthermore, the majority (66%) of certified PAs held master's degrees, with another 27% holding bachelor's degrees as their highest level of education.[48]

Supply and Demand

Employment of PAs has been projected to increase from 86,700 in 2012 to 120,000 in 2022.[49] The U.S. Bureau of Labor Statistics (BLS) predicts that, from 2012 to 2022, the field will grow much faster than the anticipated average for all occupations (38%).[50] Indeed, from 2012-2022, PAs are projected to be one of the top 30 fastest growing occupations in the U.S.[51] Already, between 2012 and 2014, the number of PAs employed in the U.S. has grown nearly 6%, from 86,700 to 91,670.[52]

> Employment of PAs has been projected to increase from 86,700 in 2012 to 120,000 in 2022, making it one of the thirty fastest growing occupations in the United States.
>
> ***Bureau Bureau of Labor Statistics, December 19, 2013.***

The degree of demand for PA services is demonstrated by the fact that roughly 15% of PAs hold more than one clinical job.[53] As a result, the demand for PAs is only expected to grow. Demand

45 "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
46 "Physician Assistant Census Report: Results from the 2010 AAPA Census" American Academy of Physician Assistants, https://www.aapa.org/workarea/downloadasset.aspx?id=1454 (Accessed 4/2/15), Tables 15 and 19.
47 "2013 Statistical Profile of Certified Physician Assistants" National Commission on Certification of Physician Assistants, July 2014, https://www.nccpa.net/Upload/PDFs/2013StatisticalProfileofCertifiedPhysicianAssistants-AnAnnualReportoftheNCCPA.pdf (Accessed 4/2/15), p. 9-10.
48 Ibid, p. 11.
49 "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
50 Ibid.
51 "Employment Projections: Fastest Growing Occupations" Bureau of Labor Statistics, December 19, 2013, http://www.bls.gov/emp/ep_table_103.htm (Accessed 4/2/15), Table 1.3.
52 "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15); "Occupatioanl Employment and Wages, May 2014: 29-1071 Physician Assistants" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291071.htm (Accessed 4/7/15).
53 "Physician Assistant census Report: Results from the 2010 AAPA Census" American Academy of Physician Assistants, https://www.aapa.org/workarea/downloadasset.aspx?id=1454 (Accessed 4/2/15).

for PAs is primarily driven by the same factors that will likely drive demand for many healthcare professionals in the coming years, namely, the aging of the baby boom generation, the increasing prevalence of certain chronic conditions (e.g. diabetes), and the increased access to healthcare services generated by the implementation of the ACA.[54]

ADVANCED PRACTICE REGISTERED NURSES (APRNS)

Description and Scope

Advanced practice registered nurses (APRNs) are Registered Nurses (RNs) with advanced education and training that allows them to provide primary care services at a higher level, either independently or in conjunction with physicians.[55]

Scope

Each type of APRN has a specific scope of practice, sometimes focusing on a specific type of patient, e.g. children, pregnant women, or patients with mental health conditions.[56] In its *Consensus Model for APRN Regulation*, the APRN Joint Dialogue Group defined a set framework for the general scope of APRN practice, specifically by identifying four "roles," or specialties (clinical nurse specialists [CNSs], certified registered nurse anesthetists [CRNAs], nurse-midwives [NMs], and NPs.[57] Prospective APRNs must choose to focus on at least one role, and they also must choose from six *population-foci* (for example, family and individual over a lifetime, adult-gerontology, pediatrics, neonatal care, women's or gender-related health, and psychiatry and mental health). At least one foci must be the target of an APRN's practice.[58] Specific practice parameters for each specialty area, in accordance with this infrastructure, will be addressed in corresponding sections.

> The APRN Joint Dialogue Group is the collaborated effort of the Advanced Practice Registered Nurses (APRN) Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee.
>
> ***The Advanced Practice Registered Nurses (APRN) Consensus Work Group and The National Council of State Boards of Nursing APRN Advisory Committee, July 7, 2008.***

Education and Training

Although the educational requirements for each APRN specialty has distinguishing components, the APRN Joint Dialogue Group's consensus model addressed, among other things, the

54 "Occupational Outlook Handbook: Physician Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).

55 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).

56 Ibid.

57 See *Specialties* in subsequent section.

58 "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 7-8.

parameters of education, accreditation, certification, and licensure requirements suggested across the four APRN specialties.[59]

The Consensus Model for APRN Regulation describes a formal, "broad-based APRN education," targeting graduate and post-graduate students, that is clinically and didactically comprehensive, yet tailored to specialty-specific objectives.[60] Under this model, academic institutions cannot admit students until their formal programs are granted pre-approval, pre-accreditation, or accreditation status by one or more accrediting bodies that are recognized by the U.S. Department of Education, CHEA, or both.[61] The APRN Joint Dialogue Group specifically lists the Commission on Collegiate Nursing Education (CCNE), National League for Nursing Accrediting Commission (NLNAC), Council on Accreditation of Nurse Anesthesia Educational Programs (COA), the Division of Accreditation of the American College of Nurse-Midwives (ACNM), and the National Association of Nurse Practitioners in Women's Health Council on Accreditation as approved accrediting entities of APRN programs.[62] Completion of an appropriate undergraduate program, most likely one that awards a Bachelor of Science in Nursing (BSN), is required for enrollment in an APRN program; often, some clinical experience is required as well.[63] Accreditation standards theoretically are crafted to ensure that program graduates are equipped to attain certification and licensure; as such, training through an accredited program is a proposed eligibility requirement for individuals pursuing licensure and those pursuing certification.[64]

Certification programs are a form of regulatory control, serving as "formal recognition of the knowledge skills and experience demonstrated by the achievement of standards identified by the profession."[65] Under the proposed model, certification programs are to be nationally accredited by the American Board of Nursing Specialties or the National Commission for Certifying Agencies (NCCA).[66]

Additionally, national certification is intended to be the metric by which licensure is issued; this assumes that communication between educating, certifying, and licensing entities is transparent and dynamic.[67] As defined by the APRN Joint Dialogue Group, licensure serves to authorize practitioners, specifically through state licensure boards that focus on licensure of APRNs.[68]

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59 "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 9.

60 Ibid, p. 10.

61 Ibid, p. 12.

62 Ibid, p. 15.

63 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).

64 "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 15.

65 "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 6.

66 Ibid, p. 4.

67 Ibid.

68 Ibid.

Specialties

As mentioned in the *Scope* section above, four distinct APRN "roles," or specialties exist: CNSs, CRNAs, NMs, and NPs.[69] The degree of subspecialty flexibility is defined by the population foci that can feasibly be targeted within each specialty area. Practitioners in these specialty fields are afforded opportunities for further subspecialization.

Industry Trends

Characteristics and Distribution

There were approximately 220,400 APRNs reported in 2012, nearly half of which were employed in the offices of physicians.[70] NPs represented the largest APRN population in 2012 (110,200 reported NPs), followed by Clinical Nurse Specialists (69,000) Nurse Anesthetists (35,200) and Nurse Midwives (6,000).[71] The most pursued APRN specialty in 2013 was acute care/critical care (17%), followed by medical-surgical specialties (13%), and pediatric or neonatal care (6%).[72] Over the last several years, a greater number of APRNs have achieved higher levels of education, with the share of RNs with a baccalaureate degree or higher growing from 50% to 61% over the period 2000-2013. Furthermore, in 2013, 17% of RNs had a master's degree, and approximately 2% had a doctoral degree.[73]

Supply and Demand

In the coming years, demand for the services of APRNs is expected to be high. The implementation of the ACA will likely continue to increase access to healthcare, and the aging of the baby-boomer generation, as well as an increased focus on preventative care, will all increase demand for healthcare services in general, including the demand for the services of APRNs.[74] However, the supply of nurses is expected to grow even faster than demand, according to a 2014 report issued by the Health Resources and Services Administration (HRSA). The HRSA report projects the supply of RNs to increase from 2.9 million FTEs to 3.8 million FTEs between 2012 and 2025 (average annual growth rate of 2.21%), while demand is only projected to grow to

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69 "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 4; Occupational Outlook Handbook: 2008-09 Edition, Bureau of Labor Statistics, Washington, D.C.: Government Printing Office, 2008, http://www.bls.gov/oco/ocos083.htm (Accessed 11/05/10), p. 1.

70 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/2015); "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15); "CNS FAQs: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, http://www.nacns.org/html/cns-faqs1.php (Accessed 4/3/15).

71 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/2015); "CNS FAQs: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, http://www.nacns.org/html/cns-faqs1.php (Accessed 4/3/15).

72 "Highlights of the National Workforce Survey of Registered Nurses" By Jill S. Budden et al., Journal of Nursing Regulation, Vol. 4, No. 2 (July 2013), http://www.njccn.org/sites/default/files/news/attachments/highlights_of_the_national_workforce_survey_of_registered_nurses.pdf (Accessed 4/2/15), p. 12-13.

73 "Highlights of the National Workforce Survey of Registered Nurses" By Jill S. Budden et al., Journal of Nursing Regulation, Vol. 4, No. 2 (July 2013), http://www.njccn.org/sites/default/files/news/attachments/highlights_of_the_national_workforce_survey_of_registered_nurses.pdf (Accessed 4/2/15), p. 8.

74 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).

3.5 million FTEs over the same period (average annual growth rate of 1.49%).[75] However, this report may underestimate future demand, primarily due to the fact that it does not consider emerging models of care that emphasize care coordination, management, and preventive services, which would further increase demand for nursing services.[76]

> The supply of RNs is projected to grow by approximately 33% between 2012 and 2025, from 2,897,000 FTEs to 3,849,000 FTEs.
>
> ***Health Resources and Services Administration, U.S. Department of Health and Human Services, December 2014..***

Although some sources have projected shortages of nurses in the past decade, a dramatic increase in the number of graduates from nursing programs may avert such a scenario.[77] As interest in the nursing profession grew, the number of nursing graduates more than doubled between 2002 and 2010.[78] Such a strong influx of new entrants into the nursing profession may help to guarantee the supply of nursing services in the long term, even in the face of rising demand.

Highlights in the Four Pillars

Regulatory

Due to increasing APRN volume in recent years, policy makers raised concern about the fact that APRN standards and scope varied from state to state.[79] On July 7, 2008, the APRN Joint Dialogue Group proposed a solution in its report, *Consensus Model for APRN Regulation*.[80] This report more clearly defined the scope of practice for APRNs, distinguishing between the four "roles," or specialized areas.[81] Also, the report outlined a model for education, accreditation, certification, and licensure of APRNs "in order to continue to ensure patient safety while expanding patient access to APRNs."[82] Because licensing regulation and prescribing rights are controlled at the state level, the model served only as a template.[83] With some exception, the states have followed suit and developed policies for each of the four focus areas that mirror the APRN proposed model.[84]

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75 "The Future of the Nursing Workforce: National- and State-Level Projections, 2012-2025" Health Resources and Services Administration, U.S. Department of Health and Human Services, December 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/nursing/workforceprojections/nursingprojections.pdf (Accessed 4/3/15), p. 2. Data in source used to calculate the compound annual growth rate (CAGR), as follows:
CAGR = [(New Data / Old Data) ^ (1 / Years Elapsed)] – 1

76 "The Future of the Nursing Workforce: National- and State-Level Projections, 2012-2025" Health Resources and Services Administration, U.S. Department of Health and Human Services, December 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/nursing/workforceprojections/nursingprojections.pdf (Accessed 4/3/15), p. 2.

77 "The Nursing Workforce in an Era of Health Care Reform" By David Auerbach, PhD et al., The New England Journal of Medicine, Vol. 368, No. 16 (April 18, 2013), http://www.nejm.org/doi/pdf/10.1056/NEJMp1301694 (Accessed 4/3/15), p. 1470-1471.

78 Ibid.

79 "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 5.

80 Ibid.

81 Ibid, p. 5, 15.

82 Ibid, p. 5.

83 Ibid, p. 6, 15.

84 Ibid, p. 6.

As discussed in the *Overview* under *Regulatory* and *Reimbursement*, changes to the supervision requirements under the 2010 OPPS and MPFS have encouraged a heightened dimension of autonomy for certain APRNs (NPs, CRNAs, and NMs, specifically).

Reimbursement

Although APRNs may be reimbursed by third-party payors (for example, Medicare, Medicaid, private insurers, and Managed Care Organizations [MCOs]) for patient care and overseeing diagnostic and, as per the 2010 OPPS and MPFS, select therapeutic procedures, the regulatory implications surrounding APRN reimbursement are complex and circumstantial.[85] APRNs are only eligible for incident-to billing (100% reimbursement) when they are employed under direct supervision of a physician. Those who practice independent of a physician or provide care in the hospital setting are generally reimbursed at 85% of the MPFS.[86] Complications arise due to the state-by-state variability of APRN practice scope.[87] Identifying incidence of Medicare fraud may be difficult because the state-sanctioned APRN practice scopes typically are general and make no explicit mention of services that are outside practice parameters.[88] More information regarding the reimbursement and regulation of nonphysician clinicians may be found in Chapters 2 and 3 of *An Era of Reform—The Four Pillars*.

Although similar, the rules that govern Medicaid reimbursement differ slightly, because they are dictated on the state level. Although some states will reimburse APRNs a percentage of the MPFS, others limit reimbursement coverage to specific patient populations and specialty areas.[89]

Competition

Research findings suggest that similar health outcomes are procured from primary care services provided by nurses with advanced and adequate training and from those provided by doctors.[90] Further, patient satisfaction for first contact care was higher for nurse visits than doctor visits. Although doctors ultimately were preferred by patients in urgent cases, this may be due to the perceived critical nature of the problem. Also, studies indicate that nurses may have had lower productivity than doctors despite comparable health outcomes; this was quantified by length of consult and rates of recall. These results are in part explained by the lack of autonomous experience in the nursing profession,[91] which may be alleviated with time. The rising demand for primary and preventive care services is expected to continue affecting the healthcare market and may shed a favorable light on APRN services.[92]

85 "An Overview of Medicare Reimbursement Regulations for Advanced Practice Nurses" By Michael A. Frakes and Traylain Evans, Nursing Economics, Vol. 24, No. 2 (March/April 2006).
86 "Medicare Claims Processing Manual: Chapter 12 – Physicians/Nonphysician Practitioners" Centers for Medicare & Medicaid Services, October 17, 2014, § 120.
87 "An Overview of Medicare Reimbursement Regulations for Advanced Practice Nurses" By Michael A. Frakes and Traylain Evans, Nursing Economics, Vol. 24, No. 2 (March/April 2006).
88 Ibid.
89 Ibid.
90 "Substitution of Doctors by Nurses in Primary Care (Review)," by M. Laurant, D. Reeves, R Hermens, J. Braspenning, et al., The Cochrane Collaboration, 2014, Wiley Publishers, p. 21.
91 "Substitution of Doctors by Nurses in Primary Care (Review)" By M. Laurant, D. Reeves et al., The Cochrane Library, Issue 1 (2009), p. 2.
92 "Reimbursement Issues in Advanced Practice Nursing: An Overview" By Z. Tashakkori and A. Aghajanian, Medsurg Nursing, Vol. 9, No. 2 (April 1, 2000), p. 95.

> Research findings suggest that similar health outcomes are procured from primary care services provided by nurses with advanced and adequate training and those provided by doctors.
>
> ***M. Laurant, D. Reeves, R Hermens, J. Braspenning, et al., 2014.***

Also, the level of autonomy afforded to APRNs may improve their marketability; for example, physicians are hiring PAs to increase their productivity.[93] Interestingly, APRNs are compensated significantly less than PAs, despite the fact that PAs must be under direct supervision of physicians.[94] Their autonomous flexibility and substantially lower earnings within the ongoing manpower and economic crises may lead to greater APRN favorability.

Competition exists within the APRN community as well, which may be impacted by changes in the healthcare environment (for example, shifts in site of service and services needed). As previously mentioned, health maintenance and prevention at the community level is being emphasized at a growing rate.[95] The feasibility of this shift in perspective is bolstered by the shift out of hospital-centric medicine and into community-based care.[96] Accordingly, APRNs who practice in nonhospital settings and emphasize community-based needs may find that they conform seamlessly to the ongoing changes in the delivery and outlook of healthcare.[97]

Technology

Significant advances in technology, e.g., genetic testing and related therapies, as well as tele-medicine and tele-nursing, may indirectly raise the knowledge and proficiency expectations for APRNs.[98] Therefore, APRNs who are increasing their aptitude for computer technology, distance learning, and new diagnostic and therapeutic measures may find that their marketability improves as a result.[99]

APRN Specialties

Certified Registered Nurse Anesthetists (CRNAs)

Description and Scope

Certified registered nurse anesthetists (CRNAs) are non-physician practitioners trained in the provision of anesthesia services as they relate to surgery, labor and delivery, and pain

93 "The Practice Boundaries of Advanced Practice Nurses: An Economic and Legal Analysis" By Michael J. Dueker et al., Federal Reserve Bank of Saint Louis: Working Paper 2005-071A, November 2005, http://research.stlouisfed.org/wp/2005/2005-071.pdf (Accessed 05/28/10), p. ii.
94 Ibid.
95 "Reimbursement Issues in Advanced Practice Nursing: An Overview" By Z. Tashakkori and A. Aghajanian, Medsurg Nursing, Vol. 9, No. 2 (April 1, 2000), p. 95.
96 Ibid.
97 Ibid.
98 "The Impact of Emerging Technology on Nursing Care: Warp Speed Ahead" By Carol Huston, MSN, DPA, FAAN, The Online Journal of Issues in Nursing, Vol. 18, No. 2, http://nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Vol-18-2013/No2-May-2013/Impact-of-Emerging-Technology.html?css=print (Accessed 4/9/15).
99 "The Impact of Emerging Technology on Nursing Care: Warp Speed Ahead" By Carol Huston, MSN, DPA, FAAN, The Online Journal of Issues in Nursing, Vol. 18, No. 2, http://nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Vol-18-2013/No2-May-2013/Impact-of-Emerging-Technology.html?css=print (Accessed 4/9/15).

management.[100] CRNAs practice in one of the first fields of specialized nursing,[101] and they can work in a variety of settings, including hospital surgical departments, obstetrical wards and delivery rooms, ambulatory surgical centers, and dental, podiatric, and plastic surgery practices.[102] Although CRNAs collaborate with a variety of health professionals, including anesthesiologists and other physicians, as well as allied health professionals such as dentists and podiatrists, CRNAs are afforded a high level of autonomy due to the profession's rigorous training requirements and practice expectations.[103]

Scope

The scope of CRNA practice is based on "expertise, state statutes or regulations, and institutional policy."[104] Generally speaking, CRNA practice parameters include, but are not limited to, pre-anesthetic assessment and evaluation, development and execution of anesthesia administration plans, the observation and management of patient vitals during plan execution, control of patient emergence and recovery from anesthesia, release and discharge of patients who have been placed in post-anesthesia care, provision of follow-up services, management of pain relief therapy programs, emergency response, and the selection, acquisition, and administration of drugs, monitoring modalities, or therapies associated with all of these services.[105]

Education and Training

Practicing CRNAs must meet specific educational and training requirements, collectively accounting for seven to eight years of education.[106] Ultimately, these professionals must graduate from an accredited program in nurse anesthesia and must be certified by the Council on Certification of Nurse Anesthetists (CCNA).[107] Nurse anesthetists may receive training at 114 accredited programs and more than 2,500 approved clinical sites; the COA publishes an updated list every year.[108] Prerequisites to enrollment in an accredited program include an appropriate baccalaureate degree, typically a BSN; a current registered nurse license; and at least one year of practice as a nurse in an acute care setting.[109]

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100 "Certified Registered Nurse Anesthetists (CRNAs) at a Glance" American Association of Nurse Anesthetists, August 22, 2008, http://www.aana.com/aboutaana.aspx?ucNavMenu_TSMenuTargetID=179&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=265 (Accessed 11/02/09); "Nurse Anesthetists and Health Reform" American Association of Nurse Anesthetists, April 2009, www.aana.com/WorkArea/downloadasset.aspx?id=20492 (Accessed 11/02/09).

101 "Education of Nurse Anesthetists in the United States—At a Glance" American Association of Nurse Anesthetists, November 2014, http://www.aana.com/ceandeducation/becomeacrna/pages/education-of-nurse-anesthetists-in-the-united-states.aspx (Accessed 4/3/15).

102 "Qualifications and Capabilities of the Certified Registered Nurse Anesthetist" American Association of Nurse Anesthetists, 2009, http://www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (Accessed 11/2/09).

103 "Certified Registered Nurse Anesthetists (CRNAs) at a Glance" American Association of Nurse Anesthetists, August 22, 2008, http://www.aana.com/aboutaana.aspx?ucNavMenu_TSMenuTargetID=179&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=265 (Accessed 11/02/09).

104 "Qualifications and Capabilities of the Certified Registered Nurse Anesthetist" American Association of Nurse Anesthetists, 2009, http://www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (Accessed 11/2/09).

105 Ibid

106 "Qualifications and Capabilities of the Certified Registered Nurse Anesthetist" American Association of Nurse Anesthetists, 2009, http://www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (Accessed 11/2/09).

107 Ibid.

108 "Education of Nurse Anesthetists in the United States—At a Glance" American Association of Nurse Anesthetists, November 2014, http://www.aana.com/ceandeducation/becomeacrna/pages/education-of-nurse-anesthetists-in-the-united-states.aspx (Accessed 4/3/15).

109 Ibid; see *Registered Nurses*.

Accredited programs, tailored to the master's degree level or higher, are typically twenty-four to thirty-six months in length and are either offered through or affiliated with a university's school of nursing or health sciences.[110] The required curriculum of these programs spans pharmacology, chemistry, anatomy, physiology, and the advanced constituents of these subject areas.[111] Additionally, students receive training in the professional components of their future trade, and they acquire knowledge of the principles in physics, technology, and pain management that relate to anesthesia practice.[112] Finally, they receive ample experience in research and exposure to clinical correlation by attending conferences.[113] Clinical residencies are a required component of training through an accredited program.[114]

Candidates who meet all the requirements for admission into an accredited nurse anesthetist program and graduate, successfully fulfilling academic and clinical requirements, are eligible to take the national certification examination administered by the CCNA.[115] Regulations and licensure requirements vary for each state, specifically with regard to the degree of autonomy afforded to CRNAs (see subsequent heading in this section, *Regulatory*).[116]

Recertification must be pursued biennially; requirements include licensure as a resident nurse, forty continuing education credits, documentation of active practice in anesthesia for the two years prior, and evidence that the candidate is mentally and physically equipped to continue providing anesthesia services.[117]

Specialties

CRNAs may become highly proficient in one of several specialty areas, including pediatric, obstetric, cardiovascular, plastic, dental, and neurosurgical anesthesia.[118] Additionally, some practitioners are credentialed in critical care nursing and respiratory care.[119]

110 "Education of Nurse Anesthetists in the United States—At a Glance" American Association of Nurse Anesthetists, November 2014, http://www.aana.com/ceandeducation/becomeacrna/pages/education-of-nurse-anesthetists-in-the-united-states.aspx (Accessed 4/3/15).

111 "Qualifications and Capabilities of the Certified Registered Nurse Anesthetist" American Association of Nurse Anesthetists, 2009, http://www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (Accessed 11/2/09).

112 Ibid.

113 Ibid.

114 "Education of Nurse Anesthetists in the United States—At a Glance" American Association of Nurse Anesthetists, November 2014, http://www.aana.com/ceandeducation/becomeacrna/pages/education-of-nurse-anesthetists-in-the-united-states.aspx (Accessed 4/3/2015).

115 "Qualifications and Capabilities of the Certified Registered Nurse Anesthetist" American Association of Nurse Anesthetists, 2009, http://www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (Accessed 11/2/09).

116 "Physician Supervision of Certified Registered Nurse Anesthetists" Center for Medicare and Medicaid Services, January 17, 2001, http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=391 (Accessed 11/11/09).

117 "Qualifications and Capabilities of the Certified Registered Nurse Anesthetist" American Association of Nurse Anesthetists, 2009, http://www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (Accessed 11/2/09).

118 "Qualifications and Capabilities of the Certified Registered Nurse Anesthetist" American Association of Nurse Anesthetists, 2009, http://www.aana.com/BecomingCRNA.aspx?ucNavMenu_TSMenuTargetID=102&ucNavMenu_TSMenuTargetType=4&ucNavMenu_TSMenuID=6&id=112 (Accessed 11/2/09).

119 Ibid.

Industry Trends

Characteristics and Distribution

As of 2014, over 36,000 nurse anesthetists practiced in the United States, with approximately 58% practicing in the offices of physicians and 29% practicing in general medical or surgical hospitals.[120] Nurse anesthetists are primarily concentrated in the eastern portion of the U.S. in terms of the ratio of nurse anesthetists per population, with the highest concentrations in West Virginia and Tennessee.[121] Men comprised over 40% of nurse anesthetists, significantly higher than the share of men in nursing as a whole (less than 10%).[122]

> Over 40% of practicing and training nurse anesthetists are men, even though less than 10% of all NPs are male.
>
> ***American Association of Nurse Anesthetists, Accessed 4/3/2015.***

Supply and Demand

Anesthesia providers, like many other healthcare professionals, will continue to face the intense and increasing pressure of market demand that is expected to continue growing as a result of the anticipated demographic and market trends.[123] CRNAs administer over 34 million anesthetics annually across the entirety of the U.S.,[124] and their services may be in particularly high demand in underserved or rural areas, where they are more likely to be employed than anesthesiologists and work longer hours than urban CRNAs.[125] The CRNA community is working toward the objective of maintaining pace with this impending increase in need; from 2007 to 2014, the number of clinical sites utilized by accredited nurse anesthesia programs increased by approximately 67%, and from 2007 to 2010, the number of CRNA graduates grew by approximately 20%.[126] In 2010, a study published by RAND Health found that the majority of the U.S. was suffering from a shortage of CRNAs.[127] Furthermore, this study found that if demand increased over 2010 levels (as is likely, due to the increased share of the population over the age of 65), there may be a significant shortage of CRNAs.[128]

120 "Occupational Employment and Wages, May 2014: 29-1151 Nurse Anesthetists" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291151.htm (Accessed 4/3/15).
121 Ibid.
122 "Certified Registered Nurse Anesthetists Fact Sheet" American Association of Nurse Anesthetists, http://www.aana.com/ceandeducation/becomeacrna/Pages/Nurse-Anesthetists-at-a-Glance.aspx (Accessed 4/3/15).
123 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
124 "Certified Registered Nurse Anesthetists Fact Sheet" American Association of Nurse Anesthetists, http://www.aana.com/ceandeducation/becomeacrna/Pages/Nurse-Anesthetists-at-a-Glance.aspx (Accessed 4/3/15).
125 "An Analysis of the Labor Markets for Anesthesiology" By Lindsay Daugherty et al., RAND Health, 2010, http://www.rand.org/content/dam/rand/pubs/technical_reports/2010/RAND_TR688.pdf (Accessed 4/3/15), p. 71.
126 "The CRNA Workforce: Too many, too, few or just right?" By John M. O'Donnell, http://c.ymcdn.com/sites/www.pana.org/resource/resmgr/Docs/ODonnell_Workforce_1page.pdf (Accessed 4/3/15), p. 6, 13; "Education of Nurse Anesthetists in the United States—At a Glance" American Association of Nurse Anesthetists, November 2014, http://www.aana.com/ceandeducation/becomeacrna/pages/education-of-nurse-anesthetists-in-the-united-states.aspx (Accessed 4/3/15).
127 "An Analysis of the Labor Markets for Anesthesiology" By Lindsay Daugherty et al., RAND Health, 2010, http://www.rand.org/content/dam/rand/pubs/technical_reports/2010/RAND_TR688.pdf (Accessed 4/3/15), p. 71.
128 Ibid, p. 66.

Despite their relatively high demand in rural facilities, some CRNAs have moved their practice outside of hospitals as a result of the growing number of opportunities for CRNAs in ambulatory surgery centers (ASCs), pain clinics, and office-based settings.[129]

> CRNAs in the United States administer over 34 million anesthetics annually, and rural hospitals are more likely to employ CRNAs than anesthesiologists.
>
> ***Lindsay Daugherty et al., 2010.***

Nurse Practitioners (NPs)

Description and Scope

Nurse practitioners (NPs) are licensed APRNs who provide primary care services, specialty care services, or both to a variety of patients in ambulatory, acute, primary, and long-term care settings.[130] NPs are afforded a significant amount of autonomy and, therefore, they may choose to practice independently or with other practitioners.[131]

Scope

The scope of practice for NPs is extremely broad, because they are afforded a tremendous degree of autonomy and flexibility in their specialty and subspecialty options.[132] The scope of care offered by NPs has been compared to the scopes and standards of physician practices.[133] NPs provide primary, ambulatory, acute, and long-term care services that span the "wellness-illness continuum."[134]

NPs are found in many settings, including private practices; public clinics; emergency and inpatient hospital settings; school clinics; jails; nursing homes; long-term, hospice, and assisted living facilities; HMOs; veteran and military forces hospitals; and urgent care facilities.[135] Regardless of the setting in which a particular NP might practice or whether their services target patients with acute or chronic conditions, NPs across the industry provide the same general range of diagnostic, therapeutic, and management care.[136] Specific services they are authorized to provide include recording and analyzing patient histories; performing physical examinations;

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129 "New Estimates for CRNA Vacancies" By Elizabeth Merwin et al., American Association of Nurse Anesthetists Journal, Vol. 77, No. 2 (April 2009), p. 128.

130 "Standards of Practice for Nurse Practitioners" American Academy of Nurse Practitioners, Guidelines (2007), http://66.219.50.180/NR/rdonlyres/2ulholufd3l2qbcwowyvrlycjvxg/Slick+Standards+of+Practice++w-Cover+3-07.pdf (Accessed 11/3/09).

131 "Scope of Practice for Nurse Practitioners" American Academy of Nurse Practitioners, Guidelines (2007), http://www.aanp.org/NR/rdonlyres/FCA07860-3DA1-46F9-80E6-E93A0972FB0D/0/Scope_of_Practice.pdf (Accessed 11/3/09).

132 "Frequently Asked Questions: Why Choose a Nurse Practitioner as your Healthcare Provider?" American Academy of Nurse Practitioners, 2007, http://www.npfinder.com/faq.pdf (Accessed 11/3/09).

133 Ibid.

134 "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp. org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 15; "Standards of Practice for Nurse Practitioners" American Academy of Nurse Practitioners, Guidelines (2007), http://66.219.50.180/NR/rdonlyres/e3a2zyjzgbrif4mxdzm7l4pivl27il5msdjkay5nvkchfnn6vqljthr3chdukfu2ulholufd3l2qbcwowyvrlycjvxg/Slick+Standards+of+Practice++w-Cover+3-07.pdf (Accessed 11/3/09).

135 "NP Facts and Figures" Nurse Practitioner Healthcare Foundation, 2009, http://www.nphealthcarefoundation.org/facts/ (Accessed 11/03/09).

136 Ibid.

ordering various diagnostic, laboratorial, and procedural services; prescribing medication; and managing patient referrals.[137]

Education and Training

NP certification examinations are offered by the following NCCA-accredited certification programs: American Academy of Nurse Practitioners; American Nurses Credentialing Center (ANCC) Commission on Certification; National Certification Corporation for the Obstetric, Gynecologic, and Neonatal Nursing Specialties; Oncology Nursing Certification Corporation; or the Pediatric Nursing Certification Board, among others.[138] In order to sit for an exam administered by any of these programs, candidates must meet the specific eligibility requirements for the test they are taking.[139] Additionally, they must have completed NP education and training through a graduate, post-graduate, or doctoral program.[140] Proof of a baccalaureate or higher degree in nursing is prerequisite to enrolling in NP education and training programs.[141] Finally, candidates must maintain Registered Nurse licensure for the duration of the practice time presented in the application.[142] Although education through an accredited program and certification are recognized as key prerequisites to NP practice, rules and regulations are issued by state licensing boards and, therefore, differ for each state.[143]

In order to maintain and renew NP certification, professionals must meet continued education requirements as outlined by the state board and certifying body with which they are affiliated.[144]

Specialties

The breadth of NP specialization is demonstrated by the fifteen NCCA-accredited certification programs across five certifying bodies.[145] NPs can specialize in acute care, adult health, family health, gerontology health, neonatal health, oncology, pediatric and child health, psychiatric and mental health, or women's health. Additionally, NPs are found practicing in numerous subspecialty fields, including allergy and immunology, cardiovascular disease, dermatology, emergency medicine, endocrinology, gastroenterology, hematology and oncology, neurology,

137 Ibid.
138 "National Commission for Certifying Agencies: Accredited Certification Programs as of September 2009" Institute for Credentialing Excellence, 2009, http://www.credentialingexcellence.org/NCCAAccreditation/AccreditedCertificationPrograms/tabid/120/Default.aspx (Accessed 06/04/10).
139 "2009 General Testing and Renewal Handbook" American Nurses Certification Center: Silver Spring, MD, 2009, http://www.nursecredentialing.org/Certification/PoliciesServices/GeneralTestingandRenewalHandbook.aspx (Accessed 11/02/09), p. 11.
140 Ibid.
141 Ibid.
142 Ibid.
143 "State Practice Environment" American Association of Nurse Practitioners, http://www.aanp.org/legislation-regulation/state-legislation-regulation/state-practice-environment (Accessed 4/9/15).
144 "2009 General Testing and Renewal Handbook" American Nurses Certification Center: Silver Spring, MD, 2009, http://www.nursecredentialing.org/Certification/PoliciesServices/GeneralTestingandRenewalHandbook.aspx (Accessed 11/02/09), p. 11; "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09) p. 8; "Standards of Practice for Nurse Practitioners" American Academy of Nurse Practitioners, Guidelines (2007), http://66.219.50.180/NR/rdonlyres/e3a2zyjzgbrif4mxdzm7l4pivl27il5msdjkay5nvkchfnn6vqljthr3chdukfu2ulholufd3l2qbcwowyvrlycjvxg/Slick+Standards+of+Practice++w-Cover+3-07.pdf (Accessed 11/3/09).
145 "National Commission for Certifying Agencies: Accredited Certification Programs as of September 2009" Institute for Credentialing Excellence, 2009, http://www.credentialingexcellence.org/NCCAAccreditation/AccreditedCertificationPrograms/tabid/120/Default.aspx (Accessed 06/04/10).

occupational health, orthopedics, pulmonology and respiratory medicine, sports medicine, and urology.[146]

Industry Trends

Characteristics and Distribution

In 2014, approximately 122,000 NPs were employed in the U.S.[147] Approximately 47% of NPs worked in the offices of physicians, with another 26% in hospitals.[148] Notably, in 2012, 11% of NPs who provided patient care did so in facilities with no physician on site.[149] Nearly half of NPs (48%) provide primary care services, significantly more than any other specialty.[150] In 2012, over 75% of NPs who provided patient care performed the following services: (1) counseling and educating patients and families; (2) conducting physical examinations and obtaining medical histories; (3) prescribing drugs for acute and chronic illnesses; and (4) ordering, performing, and interpreting diagnostic studies.[151]

> The most common services performed by NPs who provide patient care are counseling and education, physical exams and obtaining medical histories, prescribing medications, and ordering, performing, and interpreting diagnostic tests.
>
> ***Health Resources and Services Administration, U.S. Department of Health and Human Services, 2014.***

Supply and Demand

NPs constitute the largest portion of the APRN population, accounting for approximately half of APRNs in 2012.[152] The population of NPs has experienced steady growth for decades[153] and is projected to be among the fastest growing professions for the next ten years.[154] Furthermore, the number of graduates from NP programs has grown steadily for several years, with the annual number of graduates more than doubling between 2002 and 2012,[155] which may indicate a high level of long-term supply for NPs. This strong growth in supply of NPs may be necessary in the near future. As a result of the full implementation of the ACA, a projected 32 million additional

146 "Frequently Asked Questions: Why Choose a Nurse Practitioner as your Healthcare Provider?" American Academy of Nurse Practitioners, 2007, http://www.npfinder.com/faq.pdf (Accessed 11/3/09).
147 "Occupational Employment and Wages, May 2014: 29-1171 Nurse Practitioners" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291171.htm (Accessed 4/3/15).
148 Ibid.
149 "Highlights From the 2012 National Sample Survey of Nurse Practitioners" Health Resources and Services Administration, U.S. Department of Health and Human Services, 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/nursing/nursepractitionersurvey/npsurveyhighlights.pdf (Accessed 4/3/15), p. 8.
150 Ibid, p. 6.
151 Ibid, p. 5-6.
152 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/2015); "CNS FAQs: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, http://www.nacns.org/html/cns-faqs1.php (Accessed 4/3/15).
153 "Nurse Practitioner Workforce" By Lusine Poghosyan, PhD, MPH, RN, et al., Medscape, 2012, http://www.medscape.com/viewarticle/773243 (Accessed 4/3/15).
154 "Employment Projections: Fastest Growing Occupations" Bureau of Labor Statistics, December 19, 2013, http://www.bls.gov/emp/ep_table_103.htm (Accessed 4/2/15), Table 1.3.
155 "Projecting the Supply and Demand for Primary Care Practitioners Through 2020" Health Resources and Services Administration, U.S. Department of Health and Human Services, November 2013, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/projectingprimarycare.pdf (Accessed 4/3/15), p. 5-6.

patients will have access to primary care services, representing an increase in demand that primary care physicians are unlikely to be able to meet by themselves.[156] The HRSA has projected the supply of NPs to grow 30% between 2010 and 2020, and suggests that, if NPs and other mid-level providers are fully utilized for the provision of primary care services, the projected shortage of primary care providers in 2020 could be reduced by over 68%.[157]

Clinical Nurse Specialists (CNSs)

Description and Scope

Clinical nurse specialists (CNSs) are APRNs who demonstrate expertise in the provision of highly specialized patient care and consultation.[158] Specialty options for CNSs are discussed in greater detail within this section under *Specialties*.

Scope

As previously mentioned, CNSs are proficient in a specific area of nursing practice which may be described in its relation to a specific population (for example, pediatrics, gerontology, and so forth), setting (for example, critical or emergency care), disease or subspecialty of medicine (for example, oncology, diabetes, and so forth), kind of care (for example, rehabilitative, psychiatric, and so forth), or problem-base (for example, stress, pain, and so forth).[159] CNSs practice in a multitude of healthcare settings, providing specialty services in patient care as well as consult to other professionals.[160]

Education and Training

CNS education and training must be completed through a graduate-level program accredited by either CCNE or NLNAC.[161] In order to be eligible for enrollment into an accredited program, candidates must possess, at least, a baccalaureate nursing degree.[162] Candidates eligible to sit for certification examinations offered by ANCC must meet CNS test-specific requirements and maintain licensure for the duration of their training and practice.[163]

Although education through an accredited program and certification are recognized as key prerequisites to CNS practice, rules and regulations are issued by state licensing boards and, therefore, differ for each state.[164] To maintain and renew CNS certification, professionals must

156 "Nurse Practitioner Workforce" By Lusine Poghosyan, PhD, MPH, RN, et al., Medscape, 2012, http://www.medscape.com/viewarticle/773243 (Accessed 4/3/15).
157 "Projecting the Supply and Demand for Primary Care Practitioners Through 2020" Health Resources and Services Administration, U.S. Department of Health and Human Services, November 2013, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/projectingprimarycare.pdf (Accessed 4/3/15), p. 2.
158 Ibid, p. 1.
159 "FAQ's: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, http://www.nacns.org/AboutNACNS/FAQs/tabid/109/Default.aspx (Accessed 11/2/09).
160 Ibid.
161 "2009 General Testing and Renewal Handbook" American Nurses Certification Center: Silver Spring, MD, 2009, http://www.nursecredentialing.org/Certification/PoliciesServices/GeneralTestingandRenewalHandbook.aspx (Accessed 11/02/09), p. 11.
162 "2009 General Testing and Renewal Handbook" American Nurses Certification Center: Silver Spring, MD, 2009, http://www.nursecredentialing.org/Certification/PoliciesServices/GeneralTestingandRenewalHandbook.aspx (Accessed 11/02/09), p. 11.
163 Ibid.
164 "FAQ's: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, http://www.nacns.org/AboutNACNS/FAQs/tabid/109/Default.aspx (Accessed 11/2/09).

meet the continuing education requirements set by the appropriate state boards, as well as those set by the ANCC and other certification programs, or both.[165]

Specialties

The ANCC awards certification and credentialing to CNS professionals specializing in adult health (formerly known as medical-surgical nursing), adult psychiatric and mental health, advanced diabetes management, child and adolescent psychiatric and mental health, gerontology, pediatrics, and public and community health.[166] Additionally, the Oncology Nursing Certification Corporation, the American Association of Critical Care Nurses Certification Corporation, and the Orthopedic Nurses Certification Board offer CNS certification in their respective specialty areas.[167]

Industry Trends

Characteristics and Distribution

Although there are over 2.7 million registered nurses in the U.S.,[168] only 69,000 of them have achieved the education necessary to practice as a CNS.[169] The vast majority (71%) of these providers practice in the field of gerontology, and the most common duties performed by CNSs are providing patient care, consulting, or teaching other nurses or medical staff.[170] Unlike CRNAs and NPs, far more CNSs practice in hospitals (66%) than in any other setting.[171] However, only one in four CNSs is authorized to prescribe medication.[172] Demographically, CNSs are predominantly white (88%), female (95%), with a master's degree as the highest level of nursing education attained (only 13% have a doctorate degree).[173]

> The most common services performed by CNSs are providing patient care (25% of CNSs), consulting with other nurses or medical staff (20% of CNSs), and teaching other nurses or medical staff (19% of CNs).
>
> ***National Association of Clinical Nurse Specialists, 2015.***

165 "2009 General Testing and Renewal Handbook" American Nurses Certification Center: Silver Spring, MD, 2009, http://www.nursecredentialing.org/Certification/PoliciesServices/GeneralTestingandRenewalHandbook.aspx (Accessed 11/02/09), p. 11; "Consensus Model for APRN Regulation: Licensure, Accreditation, Certification, & Education" APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee, APRN Joint Dialogue Group Report (July 7, 2008), http://aanp.org/NR/rdonlyres/56292A59-8240-449D-910D-EF331FC7DC86/0/FinalAPRNJointDialogueReport7708.pdf#search="accrediting" (Accessed 11/03/09), p. 4, 6.

166 "2009 General Testing and Renewal Handbook" American Nurses Certification Center: Silver Spring, MD, 2009, http://www.nursecredentialing.org/Certification/PoliciesServices/GeneralTestingandRenewalHandbook.aspx (Accessed 11/02/09), p. 11.

167 "APN Certification" Orthopedic Nurses Certification Board, May 2009, http://www.oncb.org/apncertification.html (Accessed 11/03/09); "CCNS—Certification for Adult, Neonatal Pediatric Acute and Critical Care Clinical Nurse Specialists" American Association of Critical Care Nurses Certification Corporation, 2009, http://www.aacn.org/WD/Certifications/Content/ccnslanding.pcms?menu=Certification (Accessed 11/03/09).

168 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).

169 "CNS FAQs: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, http://www.nacns.org/html/cns-faqs1.php (Accessed 4/3/15).

170 "Key Findings from the 2014 Clinical Nurse Specialist Census" National Association of Clinical Nurse Specialists, 2015, http://www.nacns.org/docs/CensusInfographic.pdf (Accessed 4/3/15), p. 1.

171 Ibid.

172 Ibid, p. 2.

173 Ibid.

Supply and Demand

As noted above, only 69,000 out of 2.7 million (2.5%) registered nurses achieve the education necessary to practice as a CNS.[174] Between 2008 and 2013, the population of CNSs increased approximately 19%,[175] which may be in response to increased demand for healthcare services. In an October 2010 report, the Institute of Medicine (IoM) indicated that, in order to meet the increasing demand for healthcare services, the country would need to revitalize its nursing education system and greatly increase the number of nurses with advanced degrees.[176]

Certified Nurse-Midwives (CNMs)

Description and Scope

Certified nurse-midwives (CNMs) provide primary healthcare services to women, specifically before, during, and after pregnancy.[177] Additionally, these APRNs provide medical care to newborns for a month after birth.[178]

Scope

CNMs work independent of, in collaboration with, or as consult to other healthcare professionals in an effort to provide comprehensive care to women in the United States. More specifically, they provide primary, obstetrical, gynecological, and newborn care services.[179] CNMs work alongside a very diverse collection of healthcare professionals, including physicians (especially those who specialize in treating illnesses during pregnancy), nurses, social workers, physical therapists, nutritionists, childbirth mentors, and doulas.[180] The scope of CNM service is not limited to care surrounding childbirth; it includes prenatal care, delivery services, post-delivery care, infant care, annual women's health exams, birth control services, menopause services, and an array of counseling services.[181] CNMs work in the hospital setting as well as in freestanding birth centers and the home.[182]

Education and Training

Individuals interested in pursuing certification must first enroll in a NM education program that has been accredited through the Accreditation Commission for Midwifery Education (ACME,

174 "CNS FAQs: What is a Clinical Nurse Specialist?" National Association of Clinical Nurse Specialists, http://www.nacns.org/html/cns-faqs1.php (Accessed 4/3/15).
175 "Highlights of the National Workforce Survey of Registered Nurses" By Jill S. Budden et al., Journal of Nursing Regulation, Vol. 4, No. 2 (July 2013), http://www.njccn.org/sites/default/files/news/attachments/highlights_of_the_national_workforce_survey_of_registered_nurses.pdf (Accessed 4/2/15), p. 8.
176 "The Future of Nursing: Focus on Education" Institute of Medicine, October 2010, http://www.iom.edu/~/media/Files/Report%20Files/2010/The-Future-of-Nursing/Nursing%20Education%202010%20Brief.pdf (Accessed 4/3/15), p. 1, 6-7.
177 "Become a Midwife" American College of Nurse-Midwives, http://www.mymidwife.org/becoming_mw.cfm (Accessed 11/03/09).
178 Ibid.
179 "Midwifery Certification in the United States" American College of Nurse Midwives, Position Statement (March 2009), http://www.midwife.org/siteFiles/position/MidwiferyCertification_in_the_United_States_3_31_09.pdf (Accessed 11/04/09).
180 "What is a Midwife?" American College of Nurse Midwives, Journal of Midwifery and Women's Health: Share With Women Series, Vol. 51, No. 5 (September/October 2006), p. 385.
181 "What is a Midwife?" American College of Nurse Midwives, Journal of Midwifery and Women's Health: Share With Women Series, Vol. 51, No. 5 (September/October 2006), p. 385.
182 Ibid.

formerly known as the ACNM Division of Accreditation).[183] The United States Department of Education recognizes ACME as an accrediting agency.[184] Certified programs are typically at the graduate-degree level, and they focus on core competencies centered around "midwifery, public health, and other related fields."[185] NM programs must be part of or affiliated with an accredited institution for higher education.[186] The typical applicant has a BSN, however, many education programs accept applicants who do not have a nursing background because they incorporate basic nursing training into their curricula.[187]

> Many NM education programs accept applicants who do not have a nursing background and incorporate basic nursing training into their curricula accordingly.
>
> ***American College of Nurse-Midwives, 2009.***

Upon completion of training through an accredited program, candidates are eligible to sit for the American Midwifery Certification Board (AMCB) national certifying exam.[188] The AMCB is certified by NCCA.[189] Candidates who pass the certifying exam are awarded the title Certified Nurse-Midwife (CNM).[190]

Although the majority of aspiring NMs choose to pursue this professional route, training to be a certified midwife (CM) also is available and legally sanctioned in five states (New York, New Jersey, and Rhode Island, Delaware and Missouri).[191] This route of education and certification bypasses the nursing training entirely. However, CM education is recognized by the ACNM as preparing practitioners "to meet the same high standards that certified nurse-midwives must meet."[192]

State licensure is contingent upon successful completion of accredited training and certifying examination.[193] States are encouraged to implement policy that reflects the education content and certification process while promoting collaboration, preserving equal representation of decision-making entities, and ensuring access to licensed and competent professionals who have been provided title protection.[194] The ACNM also advises states to grant NMs prescribing rights.[195]

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183 "Essential Facts about Midwives" American College of Nurse Midwives, Fact Sheet (April 2009), http://www.midwife.org/Essential_Facts.pdf (Accessed 11/4/09); "Mandatory Degree Requirements for Entry into Midwifery Practice" American College of Nurse Midwives, Position Statement, July 2009, http://www.midwife.org/siteFiles/position/Mandatory_Degree_Req_for_Entry_Midwifery_Practice_7_09.pdf (Accessed 11/04/09).

184 "Mandatory Degree Requirements for Entry into Midwifery Practice" American College of Nurse Midwives, Position Statement, July 2009, http://www.midwife.org/siteFiles/position/Mandatory_Degree_Req_for_Entry_Midwifery_Practice_7_09.pdf (Accessed 11/04/09).

185 Ibid.

186 "Midwifery Certification in the United States" American College of Nurse Midwives, Position Statement (March 2009), http://www.midwife.org/siteFiles/position/MidwiferyCertification_in_the_United_States_3_31_09.pdf (Accessed 11/04/09).

187 "Become a Midwife" American College of Nurse-Midwives, http://www.mymidwife.org/becoming_mw.cfm (Accessed 11/03/09).

188 "Become a Midwife" American College of Nurse-Midwives, http://www.mymidwife.org/becoming_mw.cfm (Accessed 11/03/09); "Mandatory Degree Requirements for Entry into Midwifery Practice" American College of Nurse Midwives, Position Statement, July 2009, http://www.midwife.org/siteFiles/position/Mandatory_Degree_Req_for_Entry_Midwifery_Practice_7_09.pdf (Accessed 11/04/09).

189 Ibid.

190 "Become a Midwife" American College of Nurse-Midwives, http://www.mymidwife.org/becoming_mw.cfm (Accessed 11/03/09).

191 "Legal Recognition" American College of Nurse-Midwives, February 2015, http://www.midwife.org/Legal-Recognition (Accessed 4/9/15).

192 "Become a Midwife" American College of Nurse-Midwives, http://www.mymidwife.org/becoming_mw.cfm (Accessed 11/03/09).

193 "Principles for Licensing and Regulating Midwives" American College of Nurse Midwives, Position Statement (March 2009), http://www.midwife.org/documents/PrinciplesforLicRegMidwives3_09.pdf (Accessed 11/4/09).

194 Ibid.

195 Ibid.

Specialties

AMCB awards certificates in nurse-midwifery and midwifery.[196] Nurse-midwifery training involves both nursing and midwifery as compared with midwifery training, which lacks the nursing component.[197] ACNM recognizes that although this is the case, "dual preparation is not a basic requirement to provide competent midwifery care to women and their families."[198] As previously mentioned, CM certification is only permitted in three states.[199]

Within nurse-midwifery, practitioners have specialization options beyond the ACNM core competencies; as technology progresses, the scope of these options is expected to broaden. Specialty procedures and specialized areas of practice are covered under Standard VIII: Expanded Midwifery Practices, of the *Standards for the Practice of Midwifery* and include first assisting, vacuum extraction, and circumcision procedures.[200]

Industry Trends

Characteristics and Distribution

In 2014, there were approximately 5,000 NMs employed in the U.S.[201] Similar to NPs and CRNAs, the majority of NMs practice in either physician offices (46%) or hospitals (29%), with the majority of the remainder practicing in various outpatient care centers, offices of other health practitioners, or academic institutions.[202] However, the vast majority of births attended by NMs (95%) occur in hospitals.[203] Outside of attending births, a significant number of NMs identify reproductive care (53% of NMs) or primary care (33% of NMs) as key responsibilities in their positions.[204] Compared to other specialties of APRNs, NMs are relatively well educated, with 82% holding master's degrees and approximately 5% holding doctoral degrees.[205]

Supply and Demand

NMs represent a relatively small portion of all APRNs, constituting less than 3% of the total population of APRNs.[206] Notably, according to the U.S. Bureau of Labor Statistics, the

196 "National Commission for Certifying Agencies: Accredited Certification Programs as of September 2009" Institute for Credentialing Excellence, 2009, http://www.credentialingexcellence.org/NCCAAccreditation/AccreditedCertificationPrograms/tabid/120/Default.aspx (Accessed 06/04/10).
197 "Midwifery Certification in the United States" American College of Nurse Midwives, Position Statement (March 2009), http://www.midwife.org/siteFiles/position/MidwiferyCertification_in_the_United_States_3_31_09.pdf (Accessed 11/04/09).
198 Ibid.
199 "Become a Midwife" American College of Nurse-Midwives, http://www.mymidwife.org/becoming_mw.cfm (Accessed 11/03/09).
200 "Expansion of Midwifery Practice and Skills Beyond Basic Core Competencies" American College of Nurse Midwives, Position Statement (August 1997), http://www.midwife.org/siteFiles/position/Expansion_of_Mid_Prac_05.pdf (Accessed 11/4/09); "Standards for the Practice of Midwifery" American College of Nurse Midwives, March 8, 2003, http://www.midwife.org/siteFiles/descriptive/Standards_for_Practice_of_Midwifery_2003.pdf (Accessed 11/04/09).
201 "Occupational Employment and Wages, May 2014: 29-1161 Nurse Midwives" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291161.htm (Accessed 4/3/15).
202 Ibid.
203 "Essential Facts about Midwives" American College of Nurse-Midwives, http://www.midwife.org/acnm/files/ccLibraryFiles/Filename/000000004838/EssentialFactsAboutMidwives1214.pdf (Accessed 4/3/15).
204 Ibis.
205 Ibid.
206 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).

population of employed NMs is contracting, from 6,000 in 2012[207] to 5,000 in 2014.[208] This may indicate that, although the demand for nurses in general is strong,[209] demand for the specific service of midwives is weak. Indeed, the share of births in the U.S. that are attended by NMs has remained low (between 7 and 8%) since 2000.[210]

REHABILITATION THERAPISTS

DESCRIPTION AND SCOPE

Rehabilitation therapists are mid-level providers trained to provide an array of services intended to restore or enhance a patient's function and to recover, as much as possible, the patient's health and well-being.[211]

Scope

A set of general parameters have been established to describe the scope services that all rehabilitative therapists are expected to provide:

(1) Due to the restorative and management nature of their care, therapists must continually conduct evaluations and reevaluations.
(2) Therapists must set goals specifically catered to a patient's disorder, disability, or dysfunction in consideration of the specific problems that were identified during the evaluation process.
(3) Therapists must develop treatment plans specific to patient needs. Plan development must include procedures tailored toward achieving set goals and specific information regarding the frequency of treatment, the intensity of treatment, or both.
(4) Therapists must contemporaneously assess outcomes during the implementation of treatment plans.
(5) Therapists must instruct patients so that they properly develop the skills they need to maintain their improved condition(s).
(6) Therapists must be proficient in choosing devices to serve the purpose of replacing or enhancing function.
(7) Therapists must be experienced in educating patient families in the proper enforcement of therapies in order to ensure that the maintenance program is effective.[212]

207 Ibid.
208 "Occupational Employment and Wages, May 2014: 29-1161 Nurse Midwives" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291161.htm (Accessed 4/3/15).
209 "Occupational Outlook Handbook: Nurse Anesthetists, Nurse Midwives, and Nurse Practitioners" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/physician-assistants.htm (Accessed 4/2/15).
210 "Essential Facts about Midwives" American College of Nurse-Midwives, http://www.midwife.org/acnm/files/ccLibraryFiles/Filename/000000004838/EssentialFactsAboutMidwives1214.pdf (Accessed 4/3/2015).
211 "Medicare Claims Processing Manual: Chapter 5 - Part B Outpatient Rehabilitation and CORF/OPT Services" Centers for Medicare & Medicaid Services, Marblehead, MA: HCPro, Inc., December 18, 2009, http://www.cms.hhs.gov/manuals/downloads/clm104c05.pdf (Accessed 11/11/09).
212 "Medicare Claims Processing Manual: Chapter 5 - Part B Outpatient Rehabilitation and CORF/OPT Services" Centers for Medicare & Medicaid Services, Marblehead, MA: HCPro, Inc., December 18, 2009, http://www.cms.hhs.gov/manuals/downloads/clm104c05.pdf (Accessed 11/11/09).

The scope of practice within each type of rehabilitative therapy stems from these overarching criteria, but it is customized to align with the specialized services that therapists are trained to provide within their specialty area.

Education and Training

Although education and training requirements are, to some degree, unique for each type of rehabilitation therapist, most therapists must complete education and training at the master's degree level or higher.[213] Specific training, accrediting, and licensing requirements for each therapy type are addressed in the following sections.

Different Types of Rehabilitation Therapists

Three mainstream therapy professions fall under the scope described by the CMS: physical therapy, occupational therapy, and audiology and speech-language pathology.[214]

Physical Therapists

Scope

Physical therapists provide rehabilitative services intended to aid in the recuperation of functionality and mobility, the remediation of pain, and the maintenance of restored strength to minimize or eliminate any permanent effects of patient conditions.[215] These practitioners treat accident victims and patients with chronic, disabling conditions.[216] Physical therapy services may include exercise, stretching, hands-on therapy, and use of other equipment to ease pain, increase mobility, and prevent further injury.[217] Although some physical therapists provide a broad scope of services, others specialize in areas such as orthopedics, geriatrics, sports medicine or other areas.[218]

Education and Training

As of 2013, there were 218 physical therapy education programs accredited by the Commission on Accreditation in Physical Therapy Education, all of which offered doctoral programs.[219] Coursework for rehabilitative therapy students includes anatomy, biomechanics, physiology, biology, chemistry, physics, neuroscience, and pharmacology.[220] In addition to completing classroom and laboratory training, students are required to participate in supervised clinical

213 "Healthcare Occupations: Occupational Outlook Handbook" Bureau of Labor Statistics, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
214 "Medicare Claims Processing Manual: Chapter 5 - Part B Outpatient Rehabilitation and CORF/OPT Services" Centers for Medicare & Medicaid Services, Marblehead, MA: HCPro, Inc., December 18, 2009, http://www.cms.hhs.gov/manuals/downloads/clm104c05.pdf (Accessed 11/11/09).
215 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15).
216 Ibid.
217 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15).
218 Ibid.
219 Ibid.
220 Ibid.

training.[221] Physical therapists are required to pass state and federal licensure examinations in order to practice.[222]

Occupational Therapists

Scope

Occupational therapists care for patients with mental, physical, developmental, or emotional conditions that impair their ability to undertake daily tasks, occupational tasks, or both.[223] Occupational therapists treat patients with spinal cord injuries, cerebral palsy, Alzheimer's disease or other mental diseases, disabled children, elderly patients, or patients who are developmentally challenged or emotionally disturbed.[224]

Education and Training

Occupational therapy programs that are accredited by the Accreditation Council for Occupational Therapy Education must be at the master's degree level or higher and, as of 2013, there were 145 master's degree programs and 4 doctoral degree programs.[225] Both doctoral and master's degree programs require at least 24 weeks of supervised clinical work.[226] Licensure is regulated in all states; candidates must complete accredited training and sit for the national certifying exam administered by the National Board of Certification in Occupational Therapy.[227] The designation assigned to practitioners who achieve licensure is *Occupational Therapist Registered*.[228]

Audiologists and Speech-Language Pathologists

Scope

The Council for Clinical Certification in Audiology and Speech-Language Pathology (CFCC) of the American Speech-Language-Hearing Association certifies audiologists and speech-language pathologists who meet their designated criteria.[229] *Audiologists* provide services in the management of auditory and balance related conditions.[230] *Speech-language pathologists* assess patients in order to diagnose a variety of speech, language, cognitive, and swallowing conditions.[231] These rehabilitation therapists work in a variety of settings, primarily in schools, hospitals, rehabilitation centers, private practices, skilled nursing and adult day care facilities,

221 Ibid.
222 Ibid.
223 "Occupational Outlook Handbook: Occupational Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-therapists.htm (Accessed 4/3/15).
224 Ibid.
225 Ibid.
226 Ibid.
227 Ibid.
228 Ibid.
229 "Fact Sheet for Audiology" American Speech-Language-Hearing Association, 2009, http://www.asha.org/careers/professions/audiology.htm (Accessed 11/11/09); "Fact Sheet for Speech-Language Pathology" American Speech-Language-Hearing Association, http://www.asha.org/careers/professions/slp.htm (Accessed 11/11/09).
230 "Fact Sheet for Audiology" American Speech-Language-Hearing Association, 2009, http://www.asha.org/careers/professions/audiology.htm (Accessed 11/11/09).
231 "Fact Sheet for Speech-Language Pathology" American Speech-Language-Hearing Association, http://www.asha.org/careers/professions/slp.htm (Accessed 11/11/09).

health departments, community facilities, government facilities and offices, and research laboratories.[232]

Education and Training

Individuals pursuing CFCC certification must first complete graduate-level training in either speech-language pathology or audiology through an accredited program. In addition to training through an accredited program, candidates must complete a clinical fellowship of at least 1,260 hours for speech language pathologists and 1,820 hours for audiologists.[233] After completing the required education and training, candidates are eligible to sit for certification examinations.[234] Audiology certification is awarded by the CFCC (Certificate of Clinical Competence in Audiology) as well as the American Board of Audiology; speech-language pathologists are certified through the CFCC.[235] Audiologists are licensed and regulated in all fifty states; typically, certification meets the requirements for state licensure in audiology.[236] Speech-language pathology is regulated and licensed in most states, each with different requirements for licensure.[237]

INDUSTRY TRENDS

Characteristics and Distribution

As of 2012, there were 464,500 rehabilitation therapists employed in the United States, with 204,200 physical therapists (44%), 113,200 occupational therapists (24%), 134,100 speech-language pathologists (29%), and 13,000 audiologists (3%).[238] Primary site of service varies with the type of rehabilitation therapist. Physical therapists, occupational therapists, and audiologists typically work in therapy offices or hospitals, while 41% of speech-language pathologists practice in schools.[239]

232 "Fact Sheet for Audiology" American Speech-Language-Hearing Association, 2009, http://www.asha.org/careers/professions/audiology.htm (Accessed 11/11/09); "Fact Sheet for Speech-Language Pathology" American Speech-Language-Hearing Association, http://www.asha.org/careers/professions/slp.htm (Accessed 11/11/09).

233 "2012 Standards and Implementation Procedures for the Certificate of Clinical Competence in Audiology" American Speech-Language-Hearing Association, January 1, 2012, http://www.asha.org/Certification/2012-Audiology-Certification-Standards/ (Accessed 4/9/15); "Speech-Language Pathology Clinical Fellowship" American Speech-Language-Hearing Association, http://www.asha.org/Certification/Clinical-Fellowship.htm (Accessed 4/9/15).

234 "Fact Sheet for Audiology" American Speech-Language-Hearing Association, 2009, http://www.asha.org/careers/professions/audiology.htm (Accessed 11/11/09); "Fact Sheet for Speech-Language Pathology" American Speech-Language-Hearing Association, http://www.asha.org/careers/professions/slp.htm (Accessed 11/11/09).

235 Ibid.

236 "Occupational Outlook Handbook: Audiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/audiologists.htm (Accessed 4/3/15).

237 "Occupational Outlook Handbook: Speech-Language Pathologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/speech-language-pathologists.htm (Accessed 4/3/15).

238 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Occupational Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Speech-Language Pathologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/speech-language-pathologists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Audiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/audiologists.htm (Accessed 4/3/15).

239 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Occupational Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Speech-Language Pathologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/speech-language-pathologists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Audiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/audiologists.htm (Accessed 4/3/15).

Physical therapists, occupational therapists, and audiologists typically work in therapy offices or hospitals, while 41% of speech-language pathologists practice in schools.

Bureau of Labor Statistics, January 8, 2014.

Supply and Demand

The supply of rehabilitation therapists is projected to grow substantially over the next several years. Physical therapists, occupational therapists, speech-language pathologists, and audiologists are all projected to grow faster than the average occupation in the U.S.,[240] with physical therapists and audiologists in the top 30 fastest growing occupations in the U.S. over the period 2012-2022.[241] Projected growth in the supply of rehabilitation therapists is linked closely to the anticipated increase in demand, fueled by an aging population, advances in medical technologies and capabilities, and an increased emphasis on health promotion.[242] Despite the fact that demand for therapy services is expected to increase by over 20% between 2012 and 2025, supply is projected to outpace demand, resulting in a surplus of occupational and physical therapists.[243]

The increasing number of elderly individuals suggests increased need for rehabilitative and preventative therapeutic services because this subset of the population is at higher risk of chronic and debilitating conditions that require therapeutic care. Additionally, because the risk of heart attack and stroke increases with age, a graying population will require increased availability of cardiac and physical rehabilitation services. Medical developments have improved the survival rate of trauma victims, who in turn will require rehabilitative services, further contributing to the growing demand. Also, technological advances have broadened the range of rehabilitative capabilities, allowing therapists to treat conditions that were previously untreatable. Lastly, healthcare reform efforts focused on improving spending, as well as on health outcomes, are encouraging initiatives in health promotion, prevention, and maintenance, potentially raising the demand for services provided by rehabilitation therapists. As a result of this expected increase in

240 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Occupational Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Speech-Language Pathologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/speech-language-pathologists.htm (Accessed 4/3/2015); "Occupational Outlook Handbook: Audiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/audiologists.htm (Accessed 4/3/15).

241 "Employment Projections: Fastest Growing Occupations" Bureau of Labor Statistics, December 19, 2013, http://www.bls.gov/emp/ep_table_103.htm (Accessed 4/2/15), Table 1.3.

242 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Occupational Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Speech-Language Pathologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/speech-language-pathologists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Audiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/audiologists.htm (Accessed 4/3/15).

243 "Health Workforce Projections: Occupational Therapy and Physical Therapy" Health Resources and Services Administration, U.S. Department of Health and Human Services, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/projections/occupationalphysicaltherapy.pdf (Accessed 4/3/15).

demand, the job market for rehabilitation therapists may expand,[244] i.e., employers may hire therapists to evaluate jobsites, develop and maintain exercise programs, and provide training in safe workplace practices.

In addition to the growth in demand for therapy services, the nature of demand for therapy services may be changing as well. Advancements in medical technology and the continued utilization of home-based treatments may both drive demand for services delivered in an outpatient setting.[245] The shifts in demand for therapy services reflect this trend: from 2004 to 2013, services delivered in inpatient rehabilitation facilities have dropped by nearly 25%.[246] This trend may push more rehabilitation therapists to provide services in therapy offices or residential care facilities.

REGISTERED DIETITIANS (RDS)

DESCRIPTION AND SCOPE

Registered dietitians (RDs) promote healthy dietary habits and consult on matters of nutritional modification in order to prevent, treat, and manage illnesses and conditions.[247] They do so by creating dietary programs and overseeing the meal preparation and distribution for their patients.[248]

Scope

RDs work in a variety of industries (for example, healthcare business and industry, public health, education, research, and private practice) to provide a broad scope of services.[249] Specifically within healthcare, RDs practice in hospitals, HMOs, private healthcare offices, facilities that house sports nutrition and wellness programs, food and nutrition companies, the community-based public health field, universities, medical centers, and research groups.[250] RDs in each of

244 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Occupational Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Speech-Language Pathologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/speech-language-pathologists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Audiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/audiologists.htm (Accessed 4/3/15).

245 "Occupational Outlook Handbook: Physical Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapists.htm (Accessed 4/3/15); "Occupational Outlook Handbook: Occupational Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-therapists.htm (Accessed 4/3/15).

246 "Report to the Congress: Medicare Payment Policy" Medicare Payment Advisory Commission, March 2015, http://www.medpac.gov/documents/reports/march-2015-report-to-the-congress-medicare-payment-policy.pdf?sfvrsn=0 (Accessed 4/7/15) p. 244.

247 "Occupational Outlook Handbook: Dietitians and Nutritionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dietitians-and-nutritionists.htm (Accessed 4/3/15).

248 Ibid.

249 "Educational and Professional Requirements" American Dietetic Association, July 2009, http://www.eatright.org/CADE/content.aspx?id=7980&terms=rd+fact+sheet (Accessed 11/4/09).

250 "Educational and Professional Requirements" American Dietetic Association, July 2009, http://www.eatright.org/CADE/content.aspx?id=7980&terms=rd+fact+sheet (Accessed 11/4/09).

these settings may choose to assume their role in clinical, community, management, consulting dietetics, or a combination of these.[251]

Education and Training

RDs have completed a bachelor's degree (graduate degrees are also available) at an accredited university in the United States wherein the curriculum is recognized by the Commission on Accreditation for Dietetics Education (CADE) as a "didactic program in dietetics."[252] CADE is the accrediting agency of the American Dietetic Association (ADA); it is recognized by the U.S. Department of Education and the CHEA.[253] Coursework requirements and elective options span a number of subject areas, including food and nutritional sciences, foodservice management, business, economics, computer science, culinary arts, sociology, communication, as well as courses in biochemical, physiological, microbiological, anatomical, and chemical sciences.[254] Degree options pursued by individuals interested in becoming an RD include dietetics, foods and nutrition, and food service systems management, among others.[255] Candidates must then enroll in a six-month to one-year CADE-accredited practice program, typically provided through a healthcare facility, community agency, or foodservice company; some programs are integrated in undergraduate or graduate programs as well.[256] Upon completing their practice training, candidates may sit for the Commission on Dietetic Registration's (CDR) national examination.[257] CDR is recognized by the National Commission for Certifying Agencies as the certifying body for dietetic specialties and subspecialties.[258] Additionally, many states have adopted regulatory requirements apart from CDR credentialing. At the time of publication, forty-six states had adopted dietetic laws.[259] Those who pass the certifying exam and become RDs must adhere to continuing education requirements (known as the Professional Development Portfolio requirements) in order to maintain their certification.[260]

> At the time of publication, forty-six states have adopted laws regulating the practice of dietetics.
>
> ***Commission on Dietetic Registration,Accessed 4/6/2015.***

251 "Occupational Outlook Handbook: Dietitians and Nutritionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dietitians-and-nutritionists.htm (Accessed 4/3/15).
252 "Educational and Professional Requirements" American Dietetic Association, July 2009, http://www.eatright.org/CADE/content.aspx?id=7980&terms=rd+fact+sheet (Accessed 11/4/09); "Registration Eligibility Requirements for Dieticians" Commission on Dietetic Registration of the American Deitetic Association, http://www.cdrnet.org/certifications/rddtr/pathwaysrd.htm (Accessed 11/5/09).
253 "Commission on Accreditation for Dietetics Education (Cade)" American Dietetics Association, 2010, http://www.eatright.org/CADE/ (Accessed 05/28/10).
254 "Educational and Professional Requirements" American Dietetic Association, July 2009, http://www.eatright.org/CADE/content.aspx?id=7980&terms=rd+fact+sheet (Accessed 11/4/09); "Occupational Outlook Handbook: Dietitians and Nutritionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dietitians-and-nutritionists.htm (Accessed 4/3/2015).
255 Ibid.
256 "Educational and Professional Requirements" American Dietetic Association, July 2009, http://www.eatright.org/CADE/content.aspx?id=7980&terms=rd+fact+sheet (Accessed 11/4/09).
257 Ibid.
258 "About CDR" Commission on Dietetic Registration, http://www.cdrnet.org/about/index.htm (Accessed 11/05/09).
259 "State Licensure" Commission on Dietetic Registration, http://www.cdrnet.org/state-licensure (Accessed 4/6/15).
260 "Educational and Professional Requirements" American Dietetic Association, July 2009, http://www.eatright.org/CADE/content.aspx?id=7980&terms=rd+fact+sheet (Accessed 11/4/09); "Who is a Registered Dietitian (RD)?" Commission on Dietetic Registration of the American Dietetic Associaiton, http://www.cdrnet.org/certifications/rddtr/rddefinition.htm (Accessed 11/3/09).

Specialties

CDR awards five specialty certifications, through which RDs may become board certified specialists in renal nutrition, board certified specialists in pediatric nutrition, board certified specialists in sports dietetics, board certified specialists in gerontological nutrition, board certified specialists in oncology nutrition, or a combination of these.[261] Depending on the specialty area, RDs must document two years of primary certification and between 1,500 and 2,000 hours of specialty practice experience before they are eligible for advanced certification.[262] In addition, as previously noted, RDs may choose to practice as clinical dietitians, community dietitians, management dietitians, or consulting dietitians.[263]

INDUSTRY TRENDS

Characteristics and Distribution

In 2012, approximately 67,400 dietitians and nutritionists were employed in the U.S., nearly a third of whom worked in hospitals.[264] Unlike many nurses, PAs, or therapists, relatively few (7%) of dietitians work in the offices of health practitioners: rather, they are more likely to work in government institutions such as schools (13% of dietitians), nursing or residential care facilities (9% of dietitians), or to be self-employed (11% of dietitians), providing consulting services to individuals or contractual work for healthcare facilities.[265]

Supply and Demand

Over the next several years, the supply of dietitians is expected to increase by approximately 20%, growing significantly faster than the average occupation in the U.S.[266] This relatively strong increase in supply may be a response to growing demand, as the share of the population over the age of 65 and the prevalence of obesity (both of which can increase demand for dietetic services) continue to grow.[267] Indeed, in the near future, demand for dietetic services may outstrip the supply of dietitians. A 2012 study published in the *Journal of the Academy of Nutrition and Dietetics* indicated that by 2020, the U.S. could face a shortage of up to 18,000 full time dietetics practitioners.[268]

261 "About CDR" Commission on Dietetic Registration, http://www.cdrnet.org/about/index.htm (Accessed 11/05/09).
262 "Board Certified Specialist Eligibility and Fee" Commission on Dietetic Registration of the American Dietetic Associaiton, http://www.cdrnet.org/certifications/spec/eapplication%20onc.htm (Accessed 11/04/09).
263 "Occupational Outlook Handbook: Dietitians and Nutritionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dietitians-and-nutritionists.htm (Accessed 4/3/15).
264 Ibid.
265 Ibid.
266 Ibid.
267 "Dietetics Supply and Demand: 2010-2020" by Roderick S. Hooker, PhD, MBA, et al., Journal of the Academy of Nutrition and Dietetics, Vol. 112, Suppl. 1 (2012), p. S85.
268 Ibid, p. S89.

DENTAL HYGIENISTS

DESCRIPTION AND SCOPE

Dental hygienists are licensed healthcare professionals who provide an array of preventive, diagnostic, and therapeutic dental services and educate patients on the importance and practice of good oral hygiene.[269]

Scope

Dental hygienists perform cleaning, screening, preventive, educational, diagnostic, assistive, and, sometimes, therapeutic services.[270] They are authorized to assess oral conditions, document and evaluate health histories, and screen the mouth, head, and neck for diseases and conditions, including those related to cancer.[271] They are proficient in diagnostic technologies, that is, x-rays, as well as the use of cleaning instruments.[272] Not only do they help manage oral hygiene by performing cleanings, but they also apply preventive sealants and fluorides and educate patients on preventive and self-maintenance efforts in oral hygiene.[273] Dental hygienists prepare diagnostic tests for dentist interpretation and, sometimes, interpret the results themselves.

Although slightly more than half of the states maintain the traditional scope of practice, under which dental hygienists provide "comprehensive oral healthcare" under the direct supervision of a dentist, the remaining states have began to reduce the stringency of the supervisory limitations placed on dental hygienists, broadening their scope of practice.[274] In some states dental hygienists who pursue higher education have been afforded increased autonomy, including the ability to start their own practices.[275] Dental hygienists who pursue certification as Advanced Dental Hygiene Practitioners (ADHPs) are authorized to administer anesthesia in states with broadened practice scopes.[276] These transformations in dental care delivery have been prompted by the growing need among underserved populations; ADHPs are discussed in the following sections.[277]

269 "Occupational Outlook Handbook: Dental Hygenists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dental-hygienists.htm (Accessed 4/3/15).
270 "Dental Team Careers: Dental Hygienist" American Dental Association, 2010, http://www.ada.org/357.aspx (Accessed 05/23/10); "Occupational Outlook Handbook: Dental Hygenists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dental-hygienists.htm (Accessed 4/3/15).
271 "Dental Team Careers: Dental Hygienist" American Dental Association, 2010, http://www.ada.org/357.aspx (Accessed 05/23/10).
272 Ibid.
273 Ibid.
274 "Practice Management for Dental Hygienists," By Esther Andrews, Philadelphia, PA: Lippincott Williams & Wilkins, 2007, p. 101.
275 Ibid.
276 Ibid.
277 "Competencies for the Advanced Dental Hygiene Practitioner (ADHP)" American Dental Hygienists' Association: Chicago, IL, March 10, 2008, http://www.adha.org/downloads/competencies.pdf (Accessed 05/28/10), p. 6.

> Slightly more than half of the states maintain the traditional scope of practice, under which dental hygienists provide "comprehensive oral healthcare" but must remain under the direct supervision of a dentist. In states with fewer restrictions, dental hygienists have been afforded increased autonomy, and these professionals have been able to start their own practices.
>
> ***Esther Andrews, 2007.***

Education and Training

A high school diploma, college entrance exam scores, and, for some programs, completion of one year of college are the prerequisites for admission to an accredited dental hygiene program.[278] The Commission on Dental Accreditation (CODA) is recognized by the U.S. Department of Education as the accrediting body of dental and dental-related education programs; in 2014, there were 335 entry-level programs, 53 degree completion programs, and 21 master's degree programs accredited by CODA.[279] The approved curriculum spans several subject areas with courses in general education, dental science, and dental hygiene science.[280] Additionally, 29% of accredited programs utilize clinical facilities separate from their campus, and 82% require some form of clinical rotation at either a community or public health site.[281] In order to practice, dental hygienists must attain licensure, which requires that they pass written and clinical exams.[282] In addition to this written examination, each state administers a clinical examination and, in most cases, an examination on the regulations that surround dental hygiene.[283]

Specialties

As previously mentioned, dental hygienists may pursue advanced training as *ADHPs*. Through their possession of a heightened degree of knowledge of the relationship between oral and systemic health, preventive medicine, health education, and wellness, ADHP's integration into the continuum of healthcare allows for a new dimension of primary oral care from which more urgent patients may be referred to dentists and other healthcare providers.[284] In brief, ADHP competencies include provision of primary oral healthcare, knowledge of healthcare policy and advocacy, management of oral care delivery, translational research, and professionalism.[285]

278 "Occupational Outlook Handbook: Dental Hygenists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dental-hygienists.htm (Accessed 4/3/15).
279 "Dental Hygiene Education" American Dental Hygienists' Association, October 21, 2014, https://www.adha.org/resources-docs/72611_Dental_Hygiene_Education_Fact_Sheet.pdf (Accessed 4/6/15), p. 12-14.
280 "Dental Hygiene: Education Facts" American Dental Hygienists' Association, Fact Sheet (May 2009), http://www.adha.org/downloads/edu/dh_ed_fact_sheet.pdf (Accessed 11/05/09).
281 "Dental Hygiene Education" American Dental Hygienists' Association, October 21, 2014, https://www.adha.org/resources-docs/72611_Dental_Hygiene_Education_Fact_Sheet.pdf (Accessed 4/6/15), p. 8.
282 "Occupational Outlook Handbook: Dental Hygenists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dental-hygienists.htm (Accessed 4/3/15).
283 Ibid.
284 "Competencies for the Advanced Dental Hygiene Practitioner (ADHP)" American Dental Hygienists' Association: Chicago, IL, March 10, 2008, http://www.adha.org/downloads/competencies.pdf (Accessed 05/28/10), p. 4.
285 Ibid, p. 10-15.

INDUSTRY TRENDS

Characteristics and Distribution

In 2012, approximately 192,800 dental hygienists were employed in the U.S., with almost all of them working in dentists' offices.[286] Over half of all dental hygienists work part-time, and as a result, many dental hygienists work for more than one dentist.[287] Dental hygienists are generally well distributed across the United States, with slightly higher numbers in California, Texas, Florida, New York, and Michigan.[288]

> Over half of all dental hygienists work part time, and some work for more than one dentist.
>
> ***Bureau of Labor Statistics, January 8, 2014.***

In 2013, over 7,000 students were enrolled in entry level dental hygiene programs (approximately 11% growth since 2009), but fewer than 400 enrolled in degree completion programs, and fewer than 100 enrolled in master's degree programs.[289] Demographically, the majority of students in dental hygiene programs in 2013 were female (96%), non-Hispanic whites (73%).[290]

Supply and Demand

At present, the United States has a significant shortage of dental health professionals. The HRSA reports that over 500 additional dental practitioners are needed to provide services to approximately 1.2 million people living in dental Health Professional Shortage Areas (HPSAs).[291] From 2012 to 2022, the BLS projects the supply of dental hygienists to grow substantially (33.3%), making it one of the 30 fastest growing occupations in the United States.[292] Reasons for this rapid growth in supply are generally linked to increasing demand for dental services, including: (1) continued research linking dental health to general health; (2) the aging of the baby boom population, many of which have more of their original teeth than previous generations did at the same age; and (3) health reform legislation that increases the number of patients with new or expanded dental insurance.[293]

> Approximately 1.2 million people in the United States live in areas where a dental workforce shortage exists.
>
> ***Health Resources and Services Administration, April 3, 2015.***

286 "Occupational Outlook Handbook: Dental Hygienists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dental-hygienists.htm (Accessed 4/6/15).
287 Ibid.
288 "Occupational Employment and Wages, May 2014: 29-2021 Dental Hygienists" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes292021.htm (Accessed 4/6/15).
289 "Dental Hygiene Education" American Dental Hygienists' Association, October 21, 2014, https://www.adha.org/resources-docs/72611_Dental_Hygiene_Education_Fact_Sheet.pdf (Accessed 4/6/15), p. 25-27.
290 Ibid, p. 24.
291 "Designated Health Professional Shortage Areas Statistics" Health Resources and Services Administration, April 3, 2015, p. 3.
292 "Employment Projections: Fastest Growing Occupations" Bureau of Labor Statistics, December 19, 2013, http://www.bls.gov/emp/ep_table_103.htm (Accessed 4/2/15), Table 1.3.
293 "Occupational Outlook Handbook: Dental Hygienists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dental-hygienists.htm (Accessed 4/6/15).

MID-LEVEL PROVIDERS OF SPECIALIZED TECHNICAL SERVICES

PHARMACISTS

Description and Scope

Pharmacists are authorized to dispense prescription drugs and advise patients and practitioners on matters of drug dosage, chemical and biological interactions, and potential adverse reactions.[294]

Scope

The scope of pharmacy practice continues to extend beyond the traditional role of drug dispensing.[295] Pharmacists provide an array of primary care and consulting services in a variety of settings.[296] Specifically, pharmacists are found in community pharmacies, hospitals, long-term care establishments, the pharmaceutical industry, managed care, and government agencies (for example, the Department of Defense, Department of Veterans Affairs, and Public Health Service).[297] In addition to dispensing drugs, pharmacists counsel patients and providers, monitor patient progress, complete paper work for third-party insurers, and "compound" or mix pharmaceutical ingredients that constitute a given medication.[298] Due to the emergence of personalized medicine and problems with drug shortages, specialty compounding has seen a recent uptick in usage and popularity.[299]

Pharmacists who practice in community pharmacies (for example, retail drugstores, hospitals, nursing homes, mental health facilities, or health clinics) comprise the majority of professionals in this field; they advise patients on how to use over-the-counter medications as well as the prescription drugs they dispense.[300] Additionally, they serve as consult with patients on any health concerns that the patient may have.[301] Pharmacists practicing within healthcare facilities serve as consult to medical professionals, as well as provide direct patient care.[302]

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294 Ibid.
295 "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).
296 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09); "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).
297 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09).
298 "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).
299 "Compounding Pharmacies Rise in Popularity but Bring Questions About Safety" By David Brown, The Washington Post, October 13, 2012, http://www.washingtonpost.com/national/health-science/compounding-pharmacies-rise-in-popularity-but-bring-questions-about-safety/2012/10/13/e87f8cc2-14a0-11e2-ba83-a7a396e6b2a7_story.html (Accessed 4/3/15).
300 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09); "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).
301 "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).
302 Ibid.

Education and Training

In order to practice pharmacy, pharmacists must be awarded licensure by their state's board of pharmacy. Although the requirements for pharmacists to receive their licensure and become *registered pharmacists (RPhs)* are determined by the state, generally accepted prerequisites include graduation from an accredited college of pharmacy, completion of residency or internship training, and successful completion of a series of state-sanctioned examinations.[303]

Historically, pharmacists were required to have, at minimum, an undergraduate degree in pharmacy (that is, a bachelor's of science).[304] However, in the early 1990s, the majority of pharmacy educational institutions voted in favor of making the Doctorate of Pharmacy (PharmD) the professional degree awarded.[305] As such, the PharmD has become the only accepted degree path available to those pursuing a career in pharmacy; it must be achieved through an accredited institution.[306] The Accreditation Council for Pharmacy Education is the national accrediting body approved by the U.S. Department of Education; at the time of publication there were 131 accredited programs from which students could choose.[307] Prerequisite to admission into a PharmD program, applicants must have at least two years of pre-pharmacy education, with courses in biology, chemistry, physics, and mathematics.[308] Coursework typical of an accredited pharmacy program includes pharmacognosy, pharmacology, pharmaceutical chemistry, pharmaceutics, clinical pharmacy, drug information, and pharmacy administration.[309] Graduates, especially those who wish to practice in a hospital setting, are required to complete residency or post-graduate training.[310]

In the early 1990s, the majority of pharmacy educational institutions voted in favor of making the Doctorate of Pharmacy (PharmD) the professional degree awarded. As such, the PharmD has become the only accepted degree path available to those pursuing a career in pharmacy; it must be achieved through an accredited institution.

American Pharmacists Association, 2009.

Upon completion of required education and training, candidates must sit for several examinations as mandated by their state, including the National Association of Boards of Pharmacy (NABP) Licensure Examination, which focuses on pharmacy skills and knowledge,

303 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09).
304 Ibid.
305 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09).
306 Ibid.
307 "ACPE" Accreditation Council for Pharmacy Education, http://www.acpe-accredit.org/about/default.asp (Accessed 4/3/15); "Accreditation Council for Pharmacy Education: Annual Report" By Peter H. Vlasses, Jeffrey W. Wadelin, Dimitra V. Travlos, and Michael J Rouse, American Journal of Pharmaceutical Education, No. 83 (Jan 2014), p. 3.
308 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09); "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).
309 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09)
310 "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).

and the Multistate Pharmacy Jurisprudence Exam (MPJE), also administered by the NABP, to assess understanding of pharmacy law.[311]

RPhs in most states are required to pursue continuing education through any variety of options, including correspondence courses, professional meetings, professional association seminars, or classes offered in colleges or schools of pharmacy.[312]

Specialties

Pharmacists may specialize in various areas, including nutrition and oncology, as well as nuclear, geriatric, psychiatric pharmacy, and others.[313]

Industry Trends

Characteristics and Distribution

As of May 2012, there were 286,400 pharmacists practicing in the United States, 123,152 of whom worked in pharmacies and drug stores (43%), 65,872 of whom worked in hospitals (23%), 22,912 of whom worked in grocery stores (8%), 14,320 of whom worked in department stores (5%), and 14,320 of whom worked in other retail stores (5%).[314]

As of early 2014, women comprised 53.7% of all pharmacists and males comprised 44.9%.[315] Additionally, 66.1% of pharmacists registered with the National Association of Boards Pharmacy held a PharmD degree level.[316] Further, as of 2009, the proportion of pharmacists practicing past the age of 55 has grown to 37.1% which is almost double the 21.6% that were practicing past the age of 55 in 2000.[317] Much of the growth in the industry from less pharmacists retiring has been accommodated through part-time employment, with those over the age of 60 more than likely practicing as a part-time pharmacist. Specifically, the proportion of pharmacists working part-time was 20.9% in 2009, a roughly 6% increase since 2000.[318]

311 Ibid.
312 "Pharmacist Education" American Pharmacists Association, http://www.pharmacist.com/AM/PrinterTemplate.cfm?Section=Pharmacist_Education&Te (Accessed 11/9/09).
313 "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15); "Board of Pharmacy Specialties" Board of Pharmacy Specialties, http://www.bpsweb.org/index.cfm (Accessed 4/9/15).
314 "Occupational Outlook Handbook: Pharmacists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacists.htm (Accessed 4/3/15).
315 "2014 NABP E-Profile Aggregate Data: A Report for the Pharmacy Workforce Center" National Association of Boards of Pharmacy, November 2014, http://www.aacp.org/advocacy/WhatDoesAACPAdvocateFor/BudgetandAppropriations/Documents/FINAL_NABP%20E-profile%20Aggregate%20Analysis%20Report%202014.pdf (Accessed 4/3/15), p.3 .
316 Ibid, p. 9.
317 "Final Report of the 2009 National Sample Survey of the Pharmacist Workforce to Determine Contemporary Demographic and Practice Characteristics" Midwest Pharmacy Workforce Research Consortium, American Association Colleges of Pharmacy, March 1, 2010, http://www.aacp.org/resources/research/pharmacyworkforcecenter/Documents/2009%20National%20Pharmacist%20Workforce%20Survey%20-%20FINAL%20REPORT.pdf (Accessed 4/3/15), p. x-xi.
318 Ibid, p. 12.

Supply and Demand

Between 2012 and 2025, the expected supply of pharmacists is expected to grow at a rate of 35% to a total supply growth of 91,200.[319] Demand for this time period is predicted to grow at a rate of 16%.[320] The Department of Health and Human Services attributes 14% of this growth to be a result of the changing demographics, and 2% of the growth to be a result of the ACA insurance coverage expansion.[321] If this estimation is correct, there will be a projected surplus of 48,900 pharmacists by 2025,[322] very different amount from the projected shortages that were predicted over the past few years.[323] Increases in supply may be attributed to a number of factors including the changing work patterns (transitioning between full-time to part-time) which on its own will be responsible for 8.8% of the projected growth.[324]

PROSTHETISTS AND ORTHOTISTS

Description and Scope

Prosthetists and *Orthotists* assist patients who are missing limbs by fitting, refining, and maintaining prosthetics.[325] These professionals are afforded the autonomy to manage and deliver comprehensive care in their field; they do so complementary to physician prescription, physiological need, cosmetic objectives, or a combination of these.[326]

Scope

Orthotists and prosthetists address neuromuscular and skeletal conditions by maximizing function, minimizing further disability, and enhancing aesthetics and, therefore, patient satisfaction.[327] These practitioners treat a wide range of injuries and related conditions, including disability caused by age, obesity, diabetes, vascular disease, and trauma; arthritis; stroke; fractures; spina bifida; scoliosis; cerebral palsy; plagiocephaly; mastectomy; and sports-related conditions and injuries.[328] Orthotists and prosthetists provide this broad scope of services by utilizing technologies that allow them to redistribute anatomical and physiological forces to meet

319 "Health Workforce Projections: Pharmacists" National Center for Health Workforce Analysis, U.S. Department of Health and Human Services, 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/projections/pharmacists.pdf (Accessed 4/3/15).
320 Ibid.
321 Ibid.
322 Ibid.
323 "The Adequacy of Pharmacist Supply: 2004 to 2030" Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Report, December 2008, ftp://ftp.hrsa.gov/bhpr/workforce/pharmacy.pdf (Accessed 5/28/10), p. iv - v.
324 "Health Workforce Projections: Pharmacists" National Center for Health Workforce Analysis, U.S. Department of Health and Human Services, 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/projections/pharmacists.pdf (Accessed 4/3/15).
325 "Occupational Outlook Handbook: Orthotists and Prosthetists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/orthotists-and-prosthetists.htm (Accessed 4/3/15).
326 "The Orthotic and Prosthetic Profession: A Workforce Demand Study" By Cathy Corathers and Mark Janczewski, Report for the National Commission on Orthotic and Prosthetic Education and the American Orthotic and Prosthetic Association, Alexandria, VA: Corathers Health Consulting, LLC, December 2006, www.ncope.org/assets/pdfs/workforce_studies.pdf (Accessed 05/28/10), p. 25.
327 "Orthotist and Prosthetist" Commission on Accreditation of Allied Health Education Programs, http://www.caahep.org/Content.aspx?ID=45 (Accessed 11/10/09).
328 "The Orthotic and Prosthetic Profession: A Workforce Demand Study" By Cathy Corathers and Mark Janczewski, Report for the National Commission on Orthotic and Prosthetic Education and the American Orthotic and Prosthetic Association, Alexandria, VA: Corathers Health Consulting, LLC, December 2006, www.ncope.org/assets/pdfs/workforce_studies.pdf (Accessed 05/28/10), p. 12, 19.

a patient's particular needs.[329] Specifically, orthotists fit patients who have disabilities of the spine, limbs, or both with devices called ortheses. Prosthetists fit patients who are missing limbs in part or entirely with devices called prostheses.[330] The scope of prosthetic and orthotic practice is comprised (not exclusively) of four key components: (1) assessing and managing clinical patients, (2) implementing technical devices, (3) managing practices, and (4) assuming professional responsibility for the care they provide.[331] Orthotists and prosthetists practice in a variety of settings, including private practices, hospitals, specialty clinics, home health settings, nursing homes, rehabilitative facilities, and academic institutions (that is, colleges, universities, and medical schools).[332]

Education and Training

To be eligible for certification by the American Board of Certification in Orthotics Prosthetics and Pedorthics (ABC), candidates must graduate from an orthotics and prosthetics program accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).[333] CAAHEP, recognized by CHEA, has approved thirteen programs in the United States, all of which offer master's degrees.[334] Prerequisites for enrollment into a four-year baccalaureate program include a high school diploma or equivalent alongside institutional admission requirements.[335] Prerequisites for admission into post-graduate certificate or degree programs include a baccalaureate degree with coursework in biology, chemistry, physics, psychology, algebra, human anatomy, and physiology documented.[336] Curricula for orthotics and prosthetic programs cover biomechanics, gait analysis, kinesiology, pathology, material science, research methods, imaging, measurement, taking impressions, rectifying models, diagnostic fitting procedures, post-operative follow-up, power, static and dynamic alignment of sockets for amputated limbs, fitting of lower and upper limb orthesis, or a combination of these.[337] Education requirements also include clinical training.[338]

Completion of a twelve-month residency accredited by the National Commission on Orthotic and Prosthetic Education (NCOPE) is also required for ABC certification.[339] Once candidates have completed educational and clinical training, they may sit for the ABC competency assessment or examination.[340] The ABC certification has been recognized by federal, state, and private agencies as the standard for orthotic and prosthetic certification; it also has been approved by the

329 "Orthotist and Prosthetist" Commission on Accreditation of Allied Health Education Programs, http://www.caahep.org/Content.aspx?ID=45 (Accessed 11/10/09).
330 Ibid.
331 Ibid.
332 "Employment Opportunities" American Academy of Orthotists and Prosthetists, http://www.opcareers.org/employment/ (Accessed 11/10/09); "Orthotist and Prosthetist" Commission on Accreditation of Allied Health Education Programs, http://www.caahep.org/Content.aspx?ID=45 (Accessed 11/10/09).
333 "Education" American Board for Certification in Orthotics, Prosthetics, and Pedorthics, 2009, http://www.abcop.org/about/Pages/Education.aspx?PF=1 (Accessed 11/10/09).
334 "CAAHEP Accredited Program Search: Orthotist/Prosthetist" Commission on Accreditation of Allied Health Education Programs, http://www.caahep.org/Find-An-Accredited-Program/ (Accessed 4/10/15).
335 "Orthotist and Prosthetist" Commission on Accreditation of Allied Health Education Programs, http://www.caahep.org/Content.aspx?ID=45 (Accessed 11/10/09).
336 Ibid.
337 Ibid.
338 Ibid.
339 "Education" American Board for Certification in Orthotics, Prosthetics, and Pedorthics, 2009, http://www.abcop.org/about/Pages/Education.aspx?PF=1 (Accessed 11/10/09).
340 "Occupational Outlook Handbook: Orthotists and Prosthetists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/orthotists-and-prosthetists.htm (Accessed 4/3/15).

NCCA.[341] The Board of Certification/Accreditation International (BOC) is "an independent, not-for-profit agency that certifies orthotists, prosthetists, pedorthists, orthotic and mastectomy fitters, and accredits their facilities" that is also recognized by the NCCA.[342] Candidates often seek dual certification from ABC and BOC.[343]

At the time of publication, seventeen states had implemented regulation of prosthetist and orthotist licensure.[344] Additionally, the ABC administers licensure examinations for six of these states.[345]

Specialties

The ABC awards several designations to mid-level orthotic and prosthetic practitioners, including certified orthotist, certified prosthetist, and certified prosthetist/orthotist.[346] Although subspecialty certification may not be awarded, certain practice areas have grown in popularity, including orthotic management of sports, orthotic management of diabetes, and prefabricated spinal system services.[347]

Industry Trends

Characteristics and Distribution

In 2012, there were 8,500 total orthotists and prosthetists.[348] Of these, 30% worked in manufacturing settings (2,550), 22% worked in health and personal care stores (1,140), 11% worked in physician practices (935), 7% worked for the federal government (595), and 6% worked in hospitals (510).[349] A survey conducted in 2013 found that prosthetists and orthotists may gravitate towards population centers, with 43% of respondents in major metropolitan areas and another 39% in moderately-sized cities or suburban areas.[350] Furthermore, this study found that although the professions are currently predominantly male (70% of respondents), orthotists and prosthetists are moving towards balance between the genders, with more young women entering the professions than young men.[351] Orthotists and prosthetists are also achieving higher levels of education. Between 2011 and 2013, the share of surveyed orthotists and prosthetists

341 "Credentialing, Licensing, and Medicare" OandPCARE.org, 2009, http://www.oandpcare.org/payor/credentials.asp (Accessed 11/10/09).
342 "About BOC" Board of Certification /Accreditation, International, http://www.bocusa.org/BOC.cfm?Page=19 (Accessed 11/13/09).
343 "The Orthotic and Prosthetic Profession: A Workforce Demand Study" By Cathy Corathers and Mark Janczewski, Report for the National Commission on Orthotic and Prosthetic Education and the American Orthotic and Prosthetic Association, Alexandria, VA: Corathers Health Consulting, LLC, December 2006, www.ncope.org/assets/pdfs/workforce_studies.pdf (Accessed 05/28/10), p. 6.
344 "State Licensure" American Board for Certification in Orthotics, Prosthetics, and Pedorthics, https://www.abcop.org/State-Licensure/Pages/state-licensure.aspx (Accessed 4/10/15).
345 "ABC Policy on State Licensure" American Board for Certification in Orthotics, Prosthetics, and Pedorthics, 2009, http://www.abcop.org/resources/Licensure/Pages/Default.aspx?PF=1 (Accessed 11/10/09); "Credentialing, Licensing, and Medicare" OandPCARE.org, 2009, http://www.oandpcare.org/payor/credentials.asp (Accessed 11/10/09).
346 "About ABC" American Board for Certification in Orthotics, Prosthetics, and Pedorthics, 2009, http://www.abcop.org/about/Pages/Default.aspx (Accessed 11/13/09).
347 "The Orthotic and Prosthetic Profession: A Workforce Demand Study" By Cathy Corathers and Mark Janczewski, Report for the National Commission on Orthotic and Prosthetic Education and the American Orthotic and Prosthetic Association, Alexandria, VA: Corathers Health Consulting, LLC, December 2006, www.ncope.org/assets/pdfs/workforce_studies.pdf (Accessed 05/28/10), p. 28.
348 "Occupational Outlook Handbook: Orthotists and Prosthetists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/orthotists-and-prosthetists.htm (Accessed 4/6/15).
349 Ibid.
350 "The O&P EDGE 2013 Salary Survey" By Laura Fonda Hochnadel, O&P Edge, September 2013, http://www.oandp.com/articles/2013-09_01.asp (Accessed 4/7/15).
351 Ibid.

with an associate's degree rose 2.4%, the share with a bachelor's degree rose 4.7%, and the share with a master's degree rose 3.0%.[352] Notably, a significant share of the orthotist and prosthetist workforce may approach retirement soon, with the about 24% of the practitioner population aged 55 and older.[353]

Supply and Demand

The BLS projects that there will be a 36% increase in the employment of orthotists and prosthetists over the next several years, growing from 8,500 in 2012 to 11,500 in 2022.[354] Indeed, prosthetists and orthotists are projected to be among the fastest growing occupations through 2022,[355] indicating that there will be a substantial increase in the supply of these practitioners relative to the general population.

This rapid increase in the supply of prosthetists and orthotists may be necessary to meet rising demand. As the baby boom generation ages, they will be more likely to develop cardiovascular disease and diabetes, both of which are leading causes of limb-loss.[356] Indeed, diabetes alone accounts for about 60% of all non-traumatic lower-limb amputations in the United States.[357] The continuing obesity epidemic may also increase demand for the services of prosthetists and orthotists. Forecasts have indicated that, by 2032, nationwide obesity rates could reach 44%.[358] Correspondingly, the incidence of type 2 diabetes and heart disease have been projected to increase substantially between 2010 and 2030.[359]

> Diabetes is among the leading reasons for amputation, accounting for about 60% of all non-traumatic lower-limb amputations in the United States.
>
> ***American Diabetes Association, March 2015.***

OPTICIANS

Description and Scope

Opticians are trained in designing, measuring, fitting, and adjusting optical lenses and frames according to a patient's prescribed needs, specified needs, or both.[360]

352 Ibid.
353 "Career Outlook" OP Careers, http://www.opcareers.org/what_is_op/career_outlook/ (Accessed 4/6/15).
354 "Occupational Outlook Handbook: Orthotists and Prosthetists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/orthotists-and-prosthetists.htm (Accessed 4/6/15).
355 "Employment Projections: Fastest Growing Occupations" Bureau of Labor Statistics, December 19, 2013, http://www.bls.gov/emp/ep_table_103.htm (Accessed 4/2/15), Table 1.3.
356 "Occupational Outlook Handbook: Orthotists and Prosthetists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/orthotists-and-prosthetists.htm (Accessed 4/6/15).
357 "Fast Facts" American Diabetes Association, March 2015, http://professional.diabetes.org/factsheet (Accessed 4/6/15).
358 "F as in Fat: How Obesity Threatens America's Future" Trust for America's Health, Robert Wood Johnson Foundation, September 2012, http://healthyamericans.org/assets/files/TFAH2012FasInFat18.pdf (Accessed 4/6/15), p. 3.
359 Ibid.
360 "Occupational Outlook Handbook: Opticians, Dispensing" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/opticians-dispensing.htm (Accessed 4/3/15).

Scope

Dispensing opticians assist clients in finding and customizing eyeglasses and contact lenses to meet their prescriptive, comfort, and personal needs.[361] They recommend frames, lenses, and protective coatings that take into consideration the patient's prescription, job, tendencies, and facial structure.[362] They take necessary facial and focal measurements, and they may even pull previous records to replicate eyeglasses or lenses the patient may have attained previously.[363] Although some opticians grind and insert lenses into frames on the basis of selected size, material, and style, others simply prepare the work orders and issue them to ophthalmic technicians.[364]

Opticians also utilize special instruments to examine clients' eyes, corneas, and lids in order to fit contact lenses.[365] After contact lenses have been fitted and prepared, opticians teach their clients how to insert, remove, and care for their new lenses.[366] Opticians may practice in medical offices, optical stores, or department or club stores.[367]

Education and Training

Although, traditionally, a high school diploma was sufficient education to pursue employment in this field, twenty-one states have mandated licensure, which, oftentimes, require that two to four years of postsecondary education or apprenticeship be completed before candidates are eligible to sit for the corresponding examination(s).[368] In 2015, there were twenty associate degree programs and one certificate program accredited by the Commission on Opticianry Accreditation, the independent organization that accredits optician programs.[369]

Examinations required for licensure vary by state, but may include state practical or written assessments, as well as the certifications examination administered by the American Board of Opticianry (ABO) and the National Contact Lens Examiners (NCLE).[370] Certification exams include the ABO's National Opticianry Competency Examination and the NCLE's Contact Lens Registry Examination.[371] Advanced certification is also available to those practitioners who meet experience and advanced education requirements and pass the corresponding examinations.[372] Advanced certification is designated as ABOC-AC (American Board of Opticianry Advanced Certification) and NCLE-AC (National Contact Lens Examiners Advanced Certification).[373]

361 Ibid.
362 Ibid.
363 Ibid.
364 Ibid.
365 Ibid.
366 Ibid.
367 Ibid.
368 "Occupational Outlook Handbook: Opticians, Dispensing" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/opticians-dispensing.htm (Accessed 4/3/15).
369 "Commission on Opticianry Accreditation: Accredited Programs" Commission on Opticianry Accreditation, http://www.coaccreditation.com/programs.shtml (Accessed 4/6/15).
370 "Who are ABO and NCLE?" American Board of Opticianry & National Contact Lens Examiners, 2009, http://www.abo-ncle.org/aboutaboncle/ (Accessed 08/14/09).
371 "Exams" American Board of Opticianry and the National Contact Lens Examiners, 2009, http://www.abo-ncle.org/basiccertificationexam (Accessed 11/10/09).
372 "ABO/NCLE Advanced Certification Programs" American Board of Opticianry and National Contact Lens Examiners, 2009, http://www.abo-ncle.org/advancedcertification/ (Accessed 11/10/09).
373 Ibid.

ABO- and NCLE-certified practitioners must meet continuing education requirements with each three-year certification period in order to maintain certification.[374]

Specialties

As previously mentioned, advanced certification is available through ABO or NCLE; these certification programs ensure that practitioners possess advanced knowledge and expertise in ophthalmic dispensing.[375]

Industry Trends

Characteristics and Distribution

As of 2012, the Bureau of Labor Statistics estimated that there were 67,600 opticians employed in the United States, with 39% employed in offices of optometrists, 32% employed in health and personal care stores, 11% employed in general merchandise stores, and 11% employed in offices of physicians.[376] Between 2012 and 2014, both the number and the average pay of opticians have exhibited growth, with the population of opticians growing from 67,600 to 73,110 (8.2% growth) and the median annual salary growing from $33,330 to $34,280 (2.8% growth).[377]

Supply and Demand

Employment is expected to rise 23% from 67,600 in 2012 to 83,500 in 2022, somewhat faster than the growth in supply of the average occupation in the United States.[378] This increase in supply may be driven by the increase in demand associated with the aging demographic because they are most in need of vision care.[379] Despite this relatively strong growth in supply, according to the HRSA, there may be a shortage of opticians by 2025 due to the change in work patterns, attrition of current opticians, change in demographic market, and impact of the ACA insurance coverage requirements.[380]

374 "Certification Renewal" American Board of Opticianry and The National Contact Lens Examiners, 2009, http://www.abo-ncle.org/certificationrenewal (Accessed 11/10/09).
375 "ABO/NCLE Advanced Certification Programs" American Board of Opticianry and National Contact Lens Examiners, 2009, http://www.abo-ncle.org/advancedcertification/ (Accessed 11/10/09).
376 "Occupational Outlook Handbook: Opticians, Dispensing" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/opticians-dispensing.htm (Accessed 4/6/15).
377 "Occupational Outlook Handbook: Opticians, Dispensing" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/opticians-dispensing.htm (Accessed 4/6/15); "Occupational Employment and Wages, May 2014: 29-2081 Opticians, Dispensing" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes292081.htm (Accessed 4/7/15).
378 "Occupational Outlook Handbook: Opticians, Dispensing" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/opticians-dispensing.htm (Accessed 4/6/15).
379 Ibid.
380 "Health Workforce Projections: Vision Occupations" National Center for Health Workforce Analysis, Health Resources and Services Administration, December 24, 2014, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/projections/visionoccupations.pdf (Accessed 4/6/15).

CONCLUSION

The role of mid-level providers may undergo significant changes due to the impact of various healthcare reform measures and the anticipated demographic and provider manpower changes over the next decades. Barriers to implementation of mid-level providers as independent practitioners include state regulatory limitations (enforced at the time of publication) to the services provided by non-physician practitioners, the popular perception of non-physician care as being of a lower quality, and a potentially unfavorable cost to productivity ratio for non-physician specialties.[381]

Conversely, with the looming physician workforce shortage, the use of non-physician providers is expected to increase, though most likely in a non-uniform manner.[382] NPs already function as the "first point of entry" for patients receiving medical care, and positive reviews of care provided by NPs and PAs provide arguably compelling evidence for the expansion of the mid-level provider role in medical practice.[383] With the expected growth in the mid-level provider workforce, providing the increase in NP and PA populations needed to enhance physician productivity, as well as the expansion of mid-level provider roles in providing care, it is possible that the manpower shortage may be met.[384] The decisions made in this era of healthcare reform will be crucial to the future of the mid-level provider workforce.

381 "Health and Health Care 2010: the Forecast, The Challenge" Institute for the Future and the Robert Wood Johnson Foundation, Second Edition, Princeton, NJ: Jossey-Bass, 2003, p. 106-107; "The Impact of Non-Physician Clinicians: Do they Improve the Quality and Cost-Effectiveness of Health Care Services?" By Miranda Laurant, et al., Medical Care Research and Review, Vol. 66, No. 6 (2009), p. 84S.

382 "Health and Health Care 2010: the Forecast, The Challenge" Institute for the Future and the Robert Wood Johnson Foundation, Second Edition, Princeton, NJ: Jossey-Bass, 2003, p. 107.

383 Ibid, p. 108.

384 "The Complexities of Physician Supply and Demand: Projections Through 2025: Executive Summary" Center for Workforce Studies of the Association of American Medical Colleges, http://www.aamc.org/workforce (Accessed 05/06/10).7.

Table 8-1: Highlights in the Four Pillars

Mid Level Provider	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Physician Assistant (PA)	All states and the District of Columbia require PA licensure in order to practice. Regulations regarding the scope of practice and prescription or dispensing rights vary from states to state.	(1)	Medicare reimburses Physician Assistant services at "80 percent the lesser of the actual charge or 85 percent of what a physician is paid under the Medicare Physician Fee Schedule." For assistant-at-surgery services, PAs receive 13.6% of the surgical payment amount under the Medicare Physician Fee Schedule.	(2)	PAs are expected to play an increasingly large role in healthcare delivery, as they are able to perform many of the same services as medical doctors, but with greater cost efficiency. Employment of PAs is projected to grow by 38% during the ten-year period ending 2022.	(3)	Due to the broad range of specialties, PA-related trends in technology are reflective of the technology trends in general healthcare . Therefore, as in the general healthcare industry, greater emphasis will continue to be made on improvement in coordination, diagnosis and preventative care.	(4)
Certified Registered Nurse Anesthetist (CRNA)	Regulation and licensure of CRNA practitioners is developed and enforced at the state level. Hospitals also are permitted to implement standards of higher stringency than their states mandate. As of April 2012, CMS approved the exemption of seventeen states from requirements for CRNA supervision.	(5)	The level of Medicare reimbursement is dependent on the amount of physician involvement. When not medially directed by a physician, the Medicare reimburses CRNAs an amount equal to that which would be paid to a physician providing the same services. If the CRNA is medically directed, or medically supervised by a physician during the provision of anesthesia services, the CRNA is reimbursed 50% of the Medicare Part B Physician Fee Schedule.	(6)	Anesthesia services are provided by an anesthesiologist alone; anesthesiologist supervising CRNA(s), other accompanying practitioners, or both; or a CRNA alone. The level of autonomy afforded to CRNAs has broadened in response to projected demand, and the need to reduce the cost of care. The cost of training one anesthesiologist being equivalent to the expense of educating eight CRNAs. Integration of CRNAs into the workforce, both as independent practitioners and as part of collaborative teams, may relieve the pressure faced by the physician and RN workforce, as opposed to adding an element of competitive tension.	(7)(8)	CRNAs may utilize injected medication (a *'nerve block'*) in order to deliver localized relief form acute pain Nerve blocks may be used in conjunction with advanced imaging technology for more accurate placement, thereby maximizing the effect of the treatment	(9)

(continued)

Mid Level Provider	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Nurse Practitioner	Without taking healthcare reform initiatives into consideration, there already exists a primary care workforce shortage. Legislation encouraging increased access to primary care would only exacerbate the deficit. Practice of NPs regulated by individual state laws, which vary in terms of the amount of independence that NPs are allowed	(10)	Medicare reimburses NP services at 80% of the lesser of the actual charge or 85% of the Medicare Physician Fee Schedule	(11)	ACA will, when fully implemented, create significant demand for primary care services, which primary care physicians will be unable to meet alone If allowed to compete with physicians in the provision of primary care services, NPs could significantly reduce the projected shortage of primary care providers	(12)	See Physician Assistant (PA)	
Clinical Nurse Specialist	A Clinical Nurse Specialist must be a registered nurse; A license is required by each state Certification is required by the ANCC A Master's degree from an accredited institution, in a specified clinical area is requisite to practice as a CNS	(13)	Medicare reimburses NP services at 80% of the lesser of the actual charge or 85% of the Medicare Physician Fee Schedule	(14)	Competition is primarily with Nurse Practitioners, and Physician Assistants, as each of similar services are provided by each, and each work in collaboration with physicians.	(15)	See Physician Assistant (PA)	

Mid Level Provider	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Certified Nurse Midwife (CNM)	CNMs and Certified Midwifes (CM)s are each primary care providers practicing *Midwifery* (i.e. gynecologic and family planning services, preconception). CNMs practice the additional nursing component. Recertification for each is required every five (5) years.	(16)	"…effective on and after January 1, 2011, payment for CNM services is made at 80% of the lesser of the actual charge, or 100% of the physician fee schedule amount for the same service performed by a physician." Medicaid covers approximately half of all births in the U.S. Medicaid reimbursement for CNM services varies by state - most (29) states reimburse CNMs at the same rate as physicians, lowest Medicaid reimbursements for CNM services are 70% of physicians' rate.	(17)	Due to overlap in scope of practice, CNMs may compete with physicians (most notably OB/GYNs) to provide various healthcare services to pregnant women and newborns As of 2013, 25 states and the District of Columbia allow CNMs to practice without physician supervision or contractual practice agreements	(18)	The American College of Nurse-Midwives emphasizes the use of evidence-based medicine and recommends avoiding unnecessary high-cost technological practices Some high-tech practices, e.g. continuous electronic fetal monitoring or induction of labor for women with uncomplicated pregnancies, have not been shown to improve outcomes	(19)
Rehabilitation Therapist	2010 OPPS final rule requires outpatient therapeutic services provided in a hospital setting to be directly supervised by a physician.	(20)	Each Medicare beneficiary has annual caps on expenditures for outpatient therapy services: $1,940 for physical therapy and speech-language pathology combined, and $1,940 for occupational therapy	(21)	Rehabilitation therapists may compete with physicians due to overlap in their scope of practice Some rehabilitation therapists, most notably physical and occupational therapists, may face increased internal competition for patients or positions, due to the projected surplus of these practitioners	(22)	American Physical Therapy Association encourages use of tele-health services, which may be used to overcome barriers of access to services and extend physical therapy services to remote, underserved areas	(23)

(continued)

Mid Level Provider	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Registered Dietician (RD)	Many states require dietitians and nutritionists to be licensed.	(24)	RDs may bill Medicare for covered tele-health services and may perform annual wellness visits under the direct supervision of a physician	(25)	RDs may face competition from other professionals with similar scopes of practice, e.g. health educators, dietetic technicians, and food service administrators. RDs may face internal competition based on disparities in education: dietitians with more advanced degrees may have better job prospects As demand for nutritional healthcare services increases, more people are likely to pursue careers as RDs	(26)	Advances in technology have focused on enabling practitioners to better monitor and analyze patient metrics, toward the end of assessing nutritional needs of patients.	(27)
Dental Hygienists	Regulated by the states, each state requires licensure of dental hygienists. An accredited dental hygiene program is required in most states, and a bachelor's degree is typical for research or clinical practice.	(28)	Dental hygienists can receive direct reimbursement from Medicaid in only 16 states Some payors, most commonly those *not* in a Direct Access state, will deny claims submitted directly by dental hygienists.	(29)	Practice outcomes suggest that ADHPs may provide quality, cost-effective oral healthcare to populations that previously have been served inadequately. American Dental Hygienists' Association has classified 37 states and the District of Columbia as Direct Access States, wherein dental hygienists can initiate care outside of a private dental office, without the presence of a dentist, dentist referral, or prior dental exam. This may allow dental hygienists to compete with dentists more effectively.	(30)	Advancements in imaging technology improve dental hygienists' ability to detect dental issues (e.g. cavities) and may be combined with new alternatives to drilling (e.g. dental lasers) Investment in nanotechnology has already led to advanced consumer products, and may improve fillings in the future Regenerative dentistry utilizes stem cells to repair or replace damaged tissue	(31)

Mid Level Provider	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Pharmacist	Regulated by FDA, which is tasked with ensuring that prescription drugs are safe and effective Regulated by DEA, which is responsible for monitoring the distribution of controlled substances. Each state enacts its own pharmacy-related legislation, and requirements for the licensure of pharmacists.	(32)	Pharmacy reimbursements from Medicare Part D negotiations are typically made with regard to ingredient costs [based on the average wholesale price (AWP) with a set discount or on a maximum allowable cost], dispensing fees, and sales tax. Medicaid negotiations for pharmacy reimbursements derive from either the AWP or the federal or state maximum allowable cost in addition to the dispensing fee.	(33)	Competition among pharmacists is expected to intensify through 2025. Demand is projected to increase, correlating to the volume of prescriptions filled, and driven by age demographics and ACA insurance coverage impact. However, as of 2012, projected percentage change in new pharmacist entrants through 2025 (35%) is expected to outpace the percentage change in demand through 2025 (16%).	(34)	E-prescribing by way of computerized physician order entry and other technological advances may allow practitioners to transfer prescriptions, catch errors prematurely, count pills, and label and deliver medication	(35)
Prosthetists and Orthotists	Some states require Prosthetists and Orthotists to be licensed. Requirements vary by state.	(36)	Prosthetics and custom-fabricated orthotics can only be supplied by healthcare professionals who meet CMS criteria as a "qualified practitioner;" orthotists and prosthetists who are certified by an accrediting organization, namely, the ABC or BOC, are covered under these criteria. Orthotic claims can only be made when accompanied by a prescription or certificate of medical necessity, as furnished by a physician. Prosthetic devices are only covered if they are under provision of incident-to services or follow from physician orders.	(37)	Advances in materials allow less-specialized providers (e.g. physicians or PAs) to fit prosthetic or orthotic devices, introducing more competition for orthotists and prosthetists More orthotists and prosthetists may enter into collaborative relationships with other types of providers as the country continues to focus on coordinated, team-based models of care	(42)	Technological advances include improved utilization of lightweight, high-strength materials, originally developed as aerospace technologies. Development of nanotechnologies that further reduce the force load while ensuring optimum strength; and utilization of computer-aided design and manufacturing technologies to design and create models with heighted accuracy and efficiency. Practitioners will have to pursue the knowledge, skill-set, and experience necessary to effectively implement these technologies into practice.	(43)

(continued)

Mid Level Provider	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Opticians	Licensure, achieved either through an approved program, or apprenticeship, is required in about 50% of states.	(44)	Generally, Medicare doesn't cover eyeglasses or contact lenses Following cataract surgery that implants an intraocular lens, Medicare Part B will reimburse a Medicare supplier for corrective lenses	(45)	Increased demand for opticians is expected through 2022, due to factors related the continued aging of the population, as well as projected increases in diabetic related eye disease. However, some employment growth is expected to be restrained due to increased productivity that will enable opticians to work more efficiently.	(46)	Innovations in optical dispensing may simultaneously increase efficiency, efficacy, and accuracy of dispensing services. Innovations in digital surfacing allow practitioners to generate complex and highly specialized surfaces by utilizing advanced software.	(47)

Notes:

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Key Sources

Key Source	Description	Citation	Website
Bureau of Labor Statistics, Occupational Outlook Handbook	"The Occupational Outlook Handbook (OOH) provides information on what workers do; the work environment; education, training, and other qualifications; pay; the job outlook; similar occupations; and sources of additional information, for 334 occupational profiles covering about 84 percent of the jobs in the economy."	"OOH FAQs" Bureau of Labor Statistics, http://www.bls.gov/ooh/about/ooh-faqs.htm (Accessed 4/9/15).	http://www.bls.gov/ooh/home.htm
The U.S. Bureau of Labor Statistics Occupational Employment and Wages	Displays occupational employment and wage estimates for various professions.	"Overview of BLS Wage Data by Area and Occupation" Bureau of Labor Statistics, http://www.bls.gov/bls/blswage.htm (Accessed 4/9/15).	http://www.bls.gov/bls/blswage.htm
Department of Health and Human Services, Health Resources and Services Administration (HRSA), Bureau of Health Professions	The HRSA is the primary federal agency for improving access to healthcare services for people who are uninsured, isolated, or medically vulnerable. The Bureau of Health Professions helps supply practitioners to areas facing workforce shortages.	"Bureau of Health Professions" Health Resources and Services Administration, http://bhpr.hrsa.gov/ (Accessed 4/9/15).	http://bhpr.hrsa.gov/
Office of the Inspector General (OIG)	The OIG produces reports from the information it gathers through a nationwide network of audits, investigations, inspections, and other mission-related functions performed by OIG components.	"Reports & Publications" Office of Inspector General, http://oig.hhs.gov/reports-and-publications/index.asp (Accessed 4/9/15).	http://oig.hhs.gov/reports-and-publications/index.asp

Associations

Type of Association	Professional Association	Description	Citation	Contact Information
National	American Academy of Physician Assistants (AAPA)	The AAPA is the national professional society that "represents a profession of more than 100,000 certified PAs across all medical and surgical specialties in all 50 states, the District of Columbia, the majority of the U.S. territories and the uniformed services."	"About AAPA" American Academy of Physician Assistants, https://www.aapa.org/twocolumnmain.aspx?id=1849 (Accessed 4/10/15).	American Academy of Physician Assistants 2318 Mill road, Suite 1300 Alexandria, VA 22314 Phone: 703-836-2272 Email: aapa@aapa.org https://www.aapa.org
Accreditation	Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA)	"The Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) is the accrediting agency that protects the interests of the public and PA profession by defining the standards for PA education and evaluating PA educational programs within the territorial United States to ensure their compliance with those standards."	"Accreditation Review Commission on Education for the Physician Assistant" Accreditation Review Commission on Education for the Physician Assistant, Inc., http://www.arc-pa.org/about/index.html (Accessed 4/10/15)	Accreditation Review Commission on Education for the Physician Assistant, Inc. 12000 Findley Road, Suite 150 Johns Creek, Georgia 30097 Phone: 770-476-1224 Fax: 770-476-1738 E-mail: webmaster@arc-pa.org http://www.arc-pa.org/
National	Academy of Nutrition and Dietetics	"The Academy of Nutrition and Dietetics is the world's largest organization of food and nutrition professionals founded in Cleveland, Ohio, in 1917… the Academy has over 75,000 members — registered dietitian nutritionists, dietetic technicians, registered, and other dietetics professionals holding undergraduate and advanced degrees in nutrition and dietetics, and students — and is committed to improving the nation's health and advancing the profession of dietetics through research, education and advocacy."	"About Us" Academy of Nutrition and Dietetics, http://www.eatrightpro.org/resources/about-us (Accessed 4/10/15).	Academy of Nutrition and Dietetics 120 South Riverside Plaza, Suite 2000 Chicago, Illinois 60606-6995 Phone: 800-877-1600 Email: foundation@eatright.org http://www.eatrightpro.org
National	American Dental Association (ADA)	"Founded in 1859, the not-for-profit American Dental Association is the nation's largest dental association, representing more than 157,000 dentist members. Since then, the ADA has grown to become the leading source of oral health related information for dentists and their patients. The ADA is committed to its members and to the improvement of oral health for the public."	"About the ADA" American Dental Association, http://www.ada.org/en/about-the-ada (Accessed 4/10/15).	American Dental Association 211 East Chicago Ave. Chicago, IL 60611-2678 Phone: 312-440-2500 Email: affiliates@ada.org http://www.ada.org

Type of Association	Professional Association	Description	Citation	Contact Information
National	American Dental Hygienists' Association (ADHA)	"ADHA is the largest national organization representing the professional interests of the more than 185,000 registered dental hygienists (RDHs) across the country."	"Mission & History" American Dental Hygienists Association, http://www.adha.org/mission-history (Accessed 4/10/15).	American Dental Hygienists' Association 444 North Michigan Avenue, Suite 3400 Chicago, IL 60611 Phone: 312-440-8900 http://www.adha.org
National	American Pharmacists Association (APhA)	"Founded in 1852, APhA is the largest association of pharmacists in the United States, with more than 62,000 practicing pharmacists, pharmaceutical scientists, student pharmacists, pharmacy technicians as members."	"Who is the American Pharmacists Association" American Pharmacists Association, http://www.pharmacist.com/about (Accessed 4/10/15).	American Pharmacists Association 2215 Constitution Avenue NW Washington, DC 20037 Phone: 202-628-4410 Fax: 202-783-2351 http://www.pharmacist.com
Accreditation	Accreditation Council for Pharmacy Education (ACPE)	"Accreditation Council for Pharmacy Education (ACPE) is the national agency for the accreditation of professional degree programs in pharmacy and providers of continuing pharmacy education. ACPE was established in 1932 for the accreditation of pre-service education, and in 1975 its scope of activity was broadened to include accreditation of providers of continuing pharmacy education."	"ACPE," Accreditation Council for Pharmacy Education, https://acpe-accredit.org/about/default.asp (Accessed 4/10/15).	Accreditation Council for Pharmacy Education 135 S. LaSalle Street, Suite 4100 Chicago, IL 60603-4810 Phone: 312-664-3575 Fax: 312-664-4652 Email: info@acpe-accredit.org https://acpe-accredit.org/
Accreditation	National Commission on Orthotic and Prosthetic Education (NCOPE)	"NCOPE develops, implements, and assures compliance with standards for orthotic and prosthetic education through accreditation and approval processes that promote exemplary patient care."	"Mission & Goals" National Commission on Orthotic and Prosthetic Education, http://www.ncope.org/about/mission/ (Accessed 4/10/15).	National Commission on Orthotic and Prosthetic Education 330 John Carlyle St., Suite 200 Alexandria, VA 22314 Phone: 703-836-7114 Fax: 703-836-0838 E-mail: info@ncope.org http://www.ncope.org
Trade Association	American Orthotic and Prosthetic Association (AOPA)	"Through government relations efforts, AOPA works to raise awareness of the profession and impact policies that affect the future of the O&P industry. AOPA membership consists of more than 2,000 O&P patient care facilities and suppliers that manufacture, distribute, design, fabricate, fit, and supervise the use of orthoses (orthopedic braces) and prostheses (artificial limbs)."	"About AOPA" American Orthotic and Prosthetic Association, http://www.aopanet.org/about-aopa/ (Accessed 4/10/15).	American Orthotic and Prosthetic Association 330 John Carlyle Street, Suite 200 Alexandria, VA 22314 Phone: 571-431-0876 Fax: 571-431-0899 E-mail: info@AOPAnet.org http://www.aopanet.org

(continued)

Type of Association	Professional Association	Description	Citation	Contact Information
Accreditation	Commission on Accreditation of Allied Health Education Programs (CAAHEP)	"The Commission on Accreditation of Allied Health Education Programs (CAAHEP) is a programmatic postsecondary accrediting agency recognized by the Council for Higher Education Accreditation (CHEA) and carries out its accrediting activities in cooperation with 23 review committees (Committees on Accreditation). CAAHEP currently accredits over 2100 entry level education programs in 28 health science professions."	"About CAAHEP" Commission on Accreditation of Allied Health Education Programs, http://www.caahep.org/content.aspx?ID=63 (Accessed 4/10/15).	Commission on Accreditation of Allied Health Education Programs 1361 Park St. Clearwater, FL 33756 Phone: 727-210-2350 Fax: 727-210-2354 http://www.caahep.org
Accreditation	American Board for Certification in Orthotics, Prosthetics, and Pedorthics, Inc. (ABC)	"The American Board for Certification (ABC) is the national certifying and accrediting body for the orthotic, prosthetic and pedorthic professions. Since its inception in 1948, ABC has become the quality standard in orthotic, prosthetic and pedorthic certification and today has more than 14,000 certified individuals and over 7,000 accredited facilities."	"Learn Who We Are" American Board for Certification in Orthotics, Prosthetics & Pedorthics, https://www.abcop.org/WhoWeAre/Pages/default.aspx (Accessed 4/10/15).	American Board for Certification in Orthotics, Prosthetics, and Pedorthics 330 John Carlyle St, Suite 210 Alexandria, VA 22314 Phone: 703-836-7114 Fax: 703-836-0838 E-mail: info@abcop.org https://www.abcop.org
Accreditation	Board of Certification/Accreditation, International (BOC)	"The Board of Certification/Accreditation (BOC), founded in 1984, is an independent, not-for-profit agency dedicated to meeting the demands for quality patient care by offering highly valued credentials for practitioners and suppliers of comprehensive orthotic and prosthetic (O&P) care and durable medical equipment (DME) services."	"About BOC" Board of Certification/Accreditation, http://www.bocusa.org/about-boc (Accessed 4/10/15).	Board of Certification/Accreditation 10451 Mill Run Circle, Suite 200 Owings Mills, MD 21117-5575 Phone: 410-581-6222 or 877-776-2200 Fax: 410-581-6228 E-mail: info@bocinternational.org http://www.bocusa.org
National	American Academy of Orthotists and Prosthetists	"The American Academy of Orthotists and Prosthetists (the Academy) was founded in November 1970 to expand the scientific and educational attainments of professional practitioners in the disciplines of orthotics and prosthetics." The Academy is "dedicated to promoting professionalism and advancing the standards of patient care through education, literature, research, advocacy, and collaboration."	"History" American Academy of Orthotists & Prosthetists, http://www.oandp.org/about/history/default.asp (Accessed 4/10/15).	American Academy of Orthotists and Prosthetists 1131 H Street, NW, Suite 501 Washington, DC 20005 Phone: 202-380-3663 Fax: 202-380-3447 http://www.oandp.org

Type of Association	Professional Association	Description	Citation	Contact Information
National	American Physical Therapy Association (APTA)	"The American Physical Therapy Association (APTA) is an individual membership professional organization representing more than 90,000 member physical therapists (PTs), physical therapist assistants (PTAs), and students of physical therapy. APTA seeks to improve the health and quality of life of individuals in society by advancing physical therapist practice, education, and research, and by increasing the awareness and understanding of physical therapy's role in the nation's health care system."	"About Us" American Physical Therapy Association, http://www.apta.org/AboutUs/ (Accessed 4/10/15).	American Physical Therapy Association 1111 North Fairfax Street Alexandria, VA 22314-1488 Phone: 703-684-2782 Fax: 703-684-7343 http://www.apta.org
Accreditation	Commission on Opticianry Accreditation (COA)	"The Commission on Opticianry Accreditation (COA) is an autonomous organization officially incorporated to serve as an independent agency for the sole purpose of accrediting opticianry and ophthalmic laboratory technology programs in the United States and its territories. COA accredits two-year Opticianry degree programs and one-year ophthalmic laboratory technology certificate programs in the United States and Canada that are sponsored by post-secondary institutions accredited by agencies recognized by the Department of Education or CHEA."	"About" Commission on Opticianry Accreditation, http://www.coaccreditation.com/about.shtml (Accessed 4/10/15).	Commission on Opticianry Accreditation Debra White, Director of Accreditation PO Box 592 Canton, NY 13617 Phone: 703-468-0566 Email: director@coaccreditation.com http://www.coaccreditation.com
Accreditation	American Board of Opticianry (ABO) and the National Contact Lens Examiners (NCLE)	"The ABO-NCLE is the largest and most prestigious Opticians' certification organization in the world, recognizing individuals whose Opticianry skills and knowledge meet predetermined standards of excellence. More than 96,000 certifications have been awarded since 1976, and more than 40,000 certifications are currently in force."	"Who is ABO-NCLE?" American Board of Opticianry and the National Contact Lens Examiners, http://www.abo-ncle.org/ABO/Consumer/About_ABO___NCLE/ABO/About/About_ABO.aspx?hkey=45797a91-5e82-4139-8fc1-b1c76caee45b (Accessed 4/10/15).	American Board of Opticianry and the National Contact Lens Examiners 6506 Loisdale Rd., Suite 209 Springfield, VA 22150 Phone:703-719-5800 Fax:703-719-9144 http://www.abo-ncle.org
National	American Optometric Association (AOA)	"The American Optometric Association represents approximately 39,000 doctors of optometry, optometry students and paraoptometric assistants and technicians. Optometrists serve patients in nearly 6,500 communities across the country, and in 3,500 of those communities are the only eye doctors. Doctors of optometry provide two-thirds of all primary eye care in the United States."	"American Optometric Association" American Optometric Association, http://www.aoa.org/?sso=y (Accessed 4/10/15).	American Optometric Association 243 N. Lindbergh Blvd. St. Louis, MO 63141 Phone: 800-365-2219 http://www.aoa.org

Chapter 9

Technicians and Paraprofessionals

Treat the patient, not the x-ray.
James M. Hunter

KEY TERMS
Direct Care Workforce
Physician Extender
Registered Nurses (RNs)
Supervision

Key Concept	Definition	Citation	Concept Mentioned on Page #
"Incident-to" Provision	Covers services for Medicare reimbursement that are "an integral, although incidental, part of the physician's personal professional services to the patient." Billing under incident-to rules only applies to those services furnished by nonprofessional practitioners (for example, paraprofessionals) who provide patient services that are integral and incidental to services provided by the attending physician; this allows the billed service to appear as though it was performed by the physician and is reimbursed at 100% of the physician fee schedule.	"The Ins and Outs of 'Incident-To' Reimbursement" By Alice G. Gosfield, Family Practice Management, November/December 2001, p. 24.	538
Technician and Paraprofessional Criteria	(1) The inability to practice independently distinguishes them from other non-physician practitioners and (2) the presence or absence of licensure requirements affects scope of practice and education requirements.	n/a	536
Licensed Technicians and Paraprofessionals	Highly educated non-physician providers who bolster the technological sophistication, efficiency, and quality of physician services. Although these technicians and paraprofessionals must be supervised by an authorized independent practitioner, their expertise is integral to the efficient provision of quality care.	n/a	539
Possible Classifications for Licensed Technicians and Paraprofessionals	(1) nurses, (2) therapists, (3) technologists, (4) clinical technicians, (5) clinical assistants, or (6) other licensed technicians and paraprofessionals	n/a	536
Unlicensed Technicians and Paraprofessionals	Provide services that do not require the same level of education, training, and regulation as their licensed counterparts. As such, these unlicensed physician extenders, having little to no practice autonomy, strictly provide manpower relief to supervising, licensed providers.	n/a	579
Categories of Unlicensed Technicians and Paraprofessionals	(1) non-clinical technicians, (2) non-clinical assistants, (3) aides, or (4) other unlicensed technicians and paraprofessionals.	n/a	537
Baby Boomer Population	" . . . those Americans born between 1946 and 1964" who are becoming the fastest-growing segment of the population as they age; relevant to healthcare in that the elderly population (aged sixty-five and older) require a disproportionate amount of healthcare services and baby boomers will increase the elderly population by five million from 1999 through 2010 alone.	"Demographic Trends and the Burden of Disease: Increasing Diversity," In "Health and Health Care 2010: The Forecast, The Challenge" Institute for the Future and The Robert Wood Johnson Foundation, Jossey-Bass, 2003, p. 17.	574
Long-Term Care Setting	Provide personal care services and healthcare services to individuals needing chronic care (e.g., nursing homes, assisted living facilities, boarding care, adult day care programs).	"What is Technology for Long-Term Care?" Technology for Long-Term Care, last modified December 1, 2009, www.techforltc.org/ltc.cfm, (Accessed 12/1/09), p. 1.	587

Key Concept	Definition	Citation	Concept Mentioned on Page #
Registered Nurse (RN) Scope of Practice	Basic duties common to all practicing RNs may include consultation with physicians or other health professionals, some level of patient education, evaluation and observation of patient progress and treatment, and provision of assistance with various diagnostic and therapeutic procedures administered by the treating independent practitioner.	"Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).	540
RN Subspecialties by Health Condition Pathway of Specialization	Addiction, Intellectual and Developmental Disabilities, Diabetes Management, Genetics, HIV/AIDS, Oncology, and Wound, Ostomy, and Continence	"Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).	542
RN Subspecialties by Organ or Body System Type Pathway of Specialization	Cardiovascular, Dermatology, Gastroenterology, Gynecology, Nephrology, Neuroscience, Ophthalmic, Orthopedic, Otorhinolaryngology, Respiratory, and Urology	"Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).	542
RN Subspecialties by Population Type Path of Specialization	Neonatology, Pediatrics, and Gerontology or Geriatrics	"Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).	542
RN Subspecialties by Work Setting or Type of Treatment Pathway of Specialization	Ambulatory Care, Critical Care, Emergency/Trauma, Holistic, Home Health Care, Hospice and Palliative Care, Infusion, Long-Term Care, Medical-Surgical, Occupational Health, Radiology, Rehabilitation, and Transplant	"Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).	542

OVERVIEW

The healthcare workforce dynamic continues to diversify in order to offset the ongoing physician shortage, the increasing demand attributed to a graying population, an increase in the incidence of chronic disease, and the perpetual downshift in reimbursement rates. As physician supply and reimbursement continue to decline, physician demand for support services will escalate, resulting in the evolution of the role of technicians and paraprofessionals in meeting the healthcare industry's versatile manpower needs.

DESCRIPTION AND SCOPE

As discussed in the *Introduction*, the non-physician practitioner population falls into three categories based on the types of services they are authorized to provide. Chapter 10, *Allied Health*, focuses on healthcare professionals who work in *parallel* with physicians by providing a

complementary, but entirely different, scope of services. Chapter 8, *Mid-Level Provider Practices*, discusses the subset of non-physician practitioners who *supplement* physicians by triaging patient care that falls within a specific sub-scope of physician services. This chapter addresses the group of non-physician practitioners who work as *physician extenders*, providing physical and technological manpower support during the provision of physician services.

Technician and Paraprofessional Criteria

Within the context of the taxonomy utilized in this *Guide*, technicians and paraprofessionals are classified on the basis of two elements:

(1) The inability to practice independently and
(2) The presence or absence of licensure requirements.

The first element defines technicians and paraprofessionals, or rather distinguishes them from other non-physician practitioners. Notwithstanding the fact that these physician extenders are unauthorized to practice autonomously, i.e., independently bill for services, the utility of their services is contingent upon the provision of complementary physician services. The legal and practical contingency of their services is inconsequential in light of the underlying role filled by *all* technicians and paraprofessionals – as manpower support working synergistically with physicians to provide efficient, high quality care.

This defining element accounts for a broad range of healthcare professionals, not all of whom unequivocally fulfill the same support needs. As such, the second element serves to further distinguish between the scope of *licensed* and *unlicensed* technician and paraprofessional practice. This distinction is a significant one, because technicians and paraprofessionals may or may not be required to achieve a mandated minimum education or certification standard to legally practice. Some technicians and paraprofessionals are highly specialized and must meet stringent education and training requirements in a complex field. These professionals may provide highly technical services, either in an effort to facilitate more efficient delivery, or because physicians are not qualified to perform those specific services. Alternately, other technicians and paraprofessionals must meet few, if any, prerequisite educational requirements and may only receive informal on-the-job training.

As a result of these two characteristics, the technician and paraprofessional population includes a range of clinical and technical professionals who provide a spectrum of services. The broad spectra of licensed and unlicensed technicians and paraprofessionals can be divided further into several broad categories. *Licensed* technicians and paraprofessionals may be classified as:

(1) Nurses;
(2) Therapists;
(3) Technologists;
(4) Clinical technicians;
(5) Clinical assistants; or
(6) Other licensed technicians and paraprofessionals.

Unlicensed technicians and paraprofessionals are divided into:

(1) Non-clinical technicians;
(2) Non-clinical assistants;
(3) Aides; or
(4) Other unlicensed technicians and paraprofessionals.

The occupational roles that fall within each of these categories will be discussed in detail in subsequent sections.

INDUSTRY TRENDS FOR PARAPROFESSIONALS

No uniform method of classifying healthcare professionals has been adopted and, as such, comprehensive data that represents this subset of the workforce is limited. However, the specific practice scopes and settings attributed to each technician and paraprofessional subpopulation (listed in the previous section) are better understood and have been assessed in depth.

Market projections suggest that the U.S. healthcare delivery system will generate new jobs at the highest annual rate from 2008 through 2016, namely by bolstering medical and dental practices, including those found in the home health, outpatient, and laboratory care settings, with technician and paraprofessional manpower.[1] The anticipated increase in healthcare demand will only intensify the growing demand for technician and paraprofessional support services.[2] From 2000 to 2022 alone, growth projections of 48% and 35% have been calculated for healthcare support and healthcare practitioner occupations, respectively.[3]

Despite the emergence of healthcare reform efforts intended to reduce healthcare spending, the anticipated increase in newly insured Americans will compensate for any differences in healthcare service provision caused by reform efforts.[4]

FOUR PILLARS

The broadening scopes of technician and paraprofessional practice may have a significant effect on the healthcare industry's *regulatory*, *reimbursement*, *competitive*, and *technological* environments. As such, a contextual understanding of these non-physician practitioners may be achieved by considering them within the framework of these *four pillars*. The continuing rise in demand for mid-level provider services may have a long-term effect on the intra-professional competitive market and, as a result, may be of added significance to the roles played by technicians and paraprofessionals. Advances in technology continue to drive changes in healthcare delivery and elevated standards for technological literacy; in order to maintain pace with dynamic technological expansion, technicians and paraprofessionals may need to raise their

1 "Preparing the Workers of Today for the Jobs of Tomorrow" Executive Office of the President Council of Economic Advisors, July 2009, http://www.whitehouse.gov/assets/documents/Jobs_of_the_Future.pdf (Accessed 6/3/10), p. 5.
2 Ibid, p. 6.
3 Ibid, p. 7.
4 Ibid, p. 7.

skill sets and competencies. For highlights in the Four Pillars for each Technician and Paraprofessional type, please see table 9-17, at the end of this Chapter.

Regulatory

Much like mid-level providers, technicians and paraprofessionals are subject to regulatory constraints related to supervision requirements. Although these non-physician practitioners are not authorized to practice autonomously, the level of freedom in critical thinking, triage services, and decision-making differs by specialty and state. For example, the scopes of services for some technicians and paraprofessionals discussed in this chapter are regulated specifically by detailed state-approved scope of practice papers. However, others may perform any task delegated to them by the attending independent care practitioner, as long as the task is in compliance with the state's general scope of practice limitations.

Reimbursement

Technician and paraprofessional services may not bill for services independently. Instead, they may only be reimbursed through the practice expense of supervising practitioners.[5] Under Medicare, many technicians and paraprofessionals may only bill for *incident-to* services, i.e., services integral and incidental to services provided by the attending independent practitioner. Services provided "incident to" physician services are billed as though they were performed by the physician and, therefore, are reimbursed at 100% of the physician fee schedule.[6] Technicians and paraprofessionals may also perform *incident-to* services under the supervision of an authorized non-physician practitioner. However, non-physician practitioners who supervise and bill for these services under their provider numbers are only reimbursed at 85% of the physician fee schedule.[7]

Reimbursement for technicians and paraprofessionals under Medicaid differs by state. Some private payors employ the same guidelines as Medicare and only reimburse *incident-to* services performed by technicians and paraprofessionals.[8] However, as the extender role of technicians and paraprofessionals broadens, reimbursement coding under *incident-to* rules may be changed to specify procedures that are typically performed by physician extenders. Also, billing and coding measures may be reconfigured to tie the reimbursement for extender services to the employing facilities rather than the supervising practitioners.[9]

5 "Reimbursement Risks with Radiologist Extenders: There is No Free Lunch!" By William T. Thorwarth, Journal of the American College of Radiology, Vol. 1, No. 6 (June 2004), p. 407.
6 "The Ins and Outs of "Incident-To" Reimbursement" By Alice G. Gosfield, Family Practice Management, Vol. 8, No. 10 (November/ December 2001), p. 24.
7 Ibid, p. 26.
8 "Medicaid Payment for Non-physician Practitioners: An Access Issue" By Catherine Hoffman, Health Affairs, Fall 1994, p. 142; "The Ins and Outs of "Incident-To" Reimbursement" By Alice G. Gosfield, Family Practice Management, Vol. 8, No. 10 (November/December 2001), p. 24.
9 "Reimbursement Risks with Radiologist Extenders: There is No Free Lunch!" By William T. Thorwarth, Journal of the American College of Radiology, Vol. 1, No. 6 (June 2004), p. 409.

Competition

The lack of practice autonomy afforded to technicians and paraprofessionals limits the degree of competition between these practitioners and physicians. Instead, a key source of competition for technicians and paraprofessionals are mid-level providers. The intra-professional competitive environment is also significant, namely due to the number of interrelated and interchangeable technician and paraprofessional positions. As utility and scope of practice for technicians and paraprofessionals grows, intra-professional competitive factors related to the discrepancies in or the overlap of specific roles may become increasingly significant.

Technology

Future investments in health information technology (e.g., mandatory implementation of *electronic health records* [EHRs]) may encourage the increased use of technician and paraprofessional healthcare personnel.[10] However, technological growth may have a negative impact on the technician and paraprofessional workforce as well. Although some developments may result in the displacement of technicians and paraprofessionals in the provision of certain routine tasks, practitioners who keep pace with technological advancements will increase their marketability to employers and contribute to the expansion of technician and paraprofessional practice scope services.

LICENSED TECHNICIANS AND PARAPROFESSIONALS

Licensed technicians and paraprofessionals are highly educated non-physician providers who bolster the technological sophistication, efficiency, and quality of physician services. Although these technicians and paraprofessionals must be supervised by an authorized independent practitioner, their expertise is integral to the efficient provision of quality care.

NURSES

The nursing professions classified herein as paraprofessional nurses include *Registered Nurses* (RNs) and *Licensed Practical Nurses* (LPN) or *Licensed Vocational Nurses* (LVN). Tables 9-1, 9-2, and 9-3 supplement the following sections by providing more information on these paraprofessional nurses.

10 "Preparing the Workers of Today for the Jobs of Tomorrow, Executive Office of the President Council of Economic Advisors, July 2009, http://www.whitehouse.gov/assets/documents/Jobs_of_the_Future.pdf (Accessed 6/3/10), p. 6.

Registered Nurses

Description and Scope

Registered nurses (RNs), one of the largest professional cohorts in the healthcare workforce, provide a variety of preventative and medical care services in collaboration with other health professionals, including the assessment, diagnosis, and, in some cases, treatment of patients.[11] All RNs are afforded some level of autonomy because they share accountability for the provision of patient care before, between, and after physician services.[12] The distinction between paraprofessional RNs and advanced practice registered nurses (APRNs) is that the latter, in addition to achieving a higher level of education and competence, has a sufficient level autonomy to facilitate independent practice and billing.[13] See table 9-1 for information related to RN scope of practice and educational requirements.

Table 9-1: Paraprofessional Nurse Specialties and Educational and Training Requirements

Specialties	Alternate Job Titles	Subspecialties†	Description	Educational and Training Requirements	Number of Accredited Programs	Accreditation and Certification Organizations
Registered Nurse (RN)	n/a	See Table 9-2	Provides a variety of preventative and medical care services in collaboration with other health professionals, including the assessment, diagnosis, and, in some cases, treatment of patients.	High school diploma or equivalent, plus accredited nursing program, plus NCLEX-RN licensure exam (minimum)	635	CCNE(accreditation) NCSBN (licensure exam)
Licensed Practical Nurse (LPN)	Licensed Vocational Nurses (LVN)—only referred to as such in California and Texas	Most are generalists, but activities can vary by work setting	Provides bedside assistance and monitors, evaluates, and helps care for patients under the supervision of a physician or RN.	High school diploma or equivalent, plus approved practical nursing program (approximately one year in length), plus NCLEX-PN licensure exam (minimum)	More than 1,500 (state-approved)	ACEN (accreditation) NCSBN (licensure exam)

Notes:

* ADN: Associate degree in nursing, BSN: Bachelor's of science degree in nursing, CCNE: Commission on Collegiate Nursing Education, NCSBN: National Council of State Boards of Nursing.

† Note that Advanced Practice Nurses (a subset of RNs with additional training and qualifications) are not included as a sub-specialty due to the increased independence in practical applications of their services. The various types of APNs are discussed in more detail in chapter 8, Mid-Level Provider Practices.

Sources by Specialty:

1. "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
2. "Occupational Outlook Handbook: Licensed Practical and Licensed Vocational Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).

11 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/registered-nurses.htm (Accessed 4/9/15), p. 1.

12 "A Study of Anesthesiology Assistants, Research Report No. 337" Legislative Research Commission, February 2007, http://www.anesthetist.org/other/AA_Study_-_RR337.pdf (Accessed 6/2/10), p. 12; "Nursing: Scope & Standards of Practice" American Nurses Association, Silver Spring, MD, 2004 Edition, 2004, p. 10

13 "Nursing: Scope & Standards of Practice" American Nurses Association, Silver Spring, MD, 2004 Edition, 2004, p. 14; see *Advanced Practice Registered Nurses (APRNs)* section of Chapter 8, *Mid-level Provider Practices*.

> RNs are one of the largest professional cohorts of the healthcare workforce.
>
> ***American Nurses Association, 2004.***

Scope

Experience, education, specialty, and the local market in which RNs practice largely determine their level of autonomy and scope of practice. Although RN scope of practice varies widely due to the broad range of specialties available, the most basic of duties common to all practicing RNs may include some level of patient education, evaluation and monitoring of patient progress and treatment, as well as assistance during various diagnostic and therapeutic procedures administered by the treating independent practitioner.[14] Licensed RNs lack the autonomy afforded to APRNs and are reimbursed under a supervising practitioner. RNs typically work in consultation with physicians or other healthcare professionals and, depending on experience, may provide supervision for LPNs, LVNs (see *Licensed Practical Nurses [LPNs] and Licensed Vocational Nurses [LVNs*]), nursing aides (see *Aides*), or a combination of these.[15]

Education and Training

Although several RN educational paths exist, all practicing RNs are required to graduate from an accredited nursing education program and successfully pass the *National Council Licensure Examination for Registered Nurses* (NCLEX-RN), offered by the *National Council of State Boards of Nursing*.[16] Nursing education programs must be accredited by the *National League for Nursing Accrediting Commission* and may result in a diploma, an Associate Degree in Nursing (ADN), or a Bachelor of Science in Nursing (BSN).[17] Although requirements vary by state, additional certification by the American Nurses Credentialing Center is available for certain specialties.[18]

With a growing number of foreign-born nurses entering the nursing workforce, regulation of nursing educational and licensure requirements has been of increasing concern in recent years. Foreign-born nurses must meet stringent requirements in order to practice in the United States. Specifically, they must demonstrate proficiency in written and spoken English, complete educational training comparable to the education provided by accredited programs in the United States, pass either the NCLEX-RN or the *Commission on Graduates of Foreign Nursing Schools* (CGFNS) qualifying examination, and have fulfilled any additional state licensure requirements.[19]

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14 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/registered-nurses.htm (Accessed 4/9/15), p. 1-3.

15 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/registered-nurses.htm (Accessed 4/9/15), p. 2; "Occupational Outlook Handbook: Licensed Practical and Licensed Vocational Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/licensed-practical-and-licensed-vocational-nurses.htm (Accessed 4/9/15), p. 1.

16 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/registered-nurses.htm (Accessed 4/9/15), p. 5-6.

17 "Occupational Outlook Handbook, 2014-2015 Edition: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/registered-nurses.htm (Accessed 4/9/15), p. 5.

18 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/registered-nurses.htm (Accessed 4/9/15), p. 5-6.

19 Ibid.

Specialties

RN specialties vary based on a number of criteria, including:

(1) Work setting or specialty services provided;
(2) Emphasis on the treatment and care of specific health conditions;
(3) Concentration on treatments related to a specific organ or body system; or
(4) Expertise in provision of care to a specific population base.[20]

For a complete list of representative specialties according to each of these criteria, see table 9-2.

Table 9-2: List of Registered Nursing Specialties and Subspecialties

Path of Specialization	Subspecialty Area*
By Work Setting or Type of Treatment	Ambulatory care
	Critical care
	Emergency or trauma
	Holistic
	Home health care
	Hospice and palliative care
	Infusion
	Long-term care
	Medical-surgical
	Occupational health
	Perianesthesia
	Perioperative
	Psychiatric-mental health
	Radiology
	Rehabilitation
	Transplant
By Health Condition	Addiction
	Intellectual and developmental disabilities
	Diabetes management
	Genetics
	HIV/AIDS
	Oncology
	Wound, ostomy, and continence
By Organ or Body System Type	Cardiovascular
	Dermatology
	Gastroenterology
	Gynecology
	Nephrology
	Neuroscience
	Ophthalmic
	Orthopedic
	Otorhinolaryngology
	Respiratory
	Urology
By Population Type	Neonatology
	Pediatrics
	Gerontology or Geriatrics

* This list, although extensive, may not be considered comprehensive.
Source: "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).

20 Ibid, p. 3.

Although APRNs traditionally are considered a subset of the RN workforce, they are discussed extensively in the *Advanced Practice Registered Nurses (APRNs)* section of Chapter 8, *Mid-level Provider Practices*, because of the expanded scope duties and autonomy they are afforded as mid-level providers.

Industry Trends

Characteristics and Distribution

The RN workforce demographic is predominantly comprised of females between the ages of 35 and 55 working primarily in a hospital setting, but also in nursing care facilities, physician offices, and other outpatient care settings.[21] Women comprised 90.9% of the total estimated workforce in 2010.[22] Additionally, 66.9% of the 2010 workforce identified themselves as white and non-Hispanic.[23] One study has suggested that the traditional stigma of the RN profession as one for white women has served as a barrier to men and minorities entering the RN workforce.[24] Despite the predominantly white makeup of the RN workforce, a growing portion of the workforce exists that is comprised of foreign-born nurses. The number of foreign-born RNs practicing in the United States has grown from 9% in 1994 to more than 16% as of 2008.[25] See table 9-3 for information related to RN workforce characteristics.

> The number of foreign-born RNs practicing in the U.S. has grown from 9% in 1994 to more than 16% as of 2008.
>
> ***Peter I. Buerhaus, David I. Auerbach, & Douglas O. Staiger, 2009.***

Table 9-3: Paraprofessional Nurse Distribution, Characteristics, and Demand

Specialty	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics*	Notes on Demand
Registered Nurse (RN)	2,711,500	3,238,400	19.00%	Hospitals (63.2%) Physician offices (4.8%), Nursing care facilities (7.4%), Outpatient care centers (4.6%)	90.9% female, 75.4% white, and 9.9% black	Projections indicate that, although the number of RNs is increasing, relative to the general population, the number of RNs will decrease between 2005 and 2020, reaching 260,000 by 2025. This will create a worsening nurse shortage.

(continued)

21 "The U.S. Health Workforce Chartbook Part I: Clinicians" U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis, Washington, DC, November 2013, p. 11-12.
22 Ibid., p. 12.
23 Ibid, p. 11-12.
24 "The Recent Surge in Nurse Employment: Causes and Implications" By Peter I. Buerhaus, David I. Auerbach, and Douglas O. Staiger, Health Affairs, Vol. 28, No. 4 (2009), p. w666.
25 Ibid.

Specialty	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics*	Notes on Demand
Licensed Practical Nurse (LPN)	738,400	921,300	25.00%	Hospitals (29.3%) Nursing care facilities (30.7%) Physician offices (8.2%)	92.4% female, 63.2% white, and 23.6% black. The average age is 43.	Growth is primarily due to the growing number of elderly requiring services, and more job growth is expected in home health and nursing care facilities than in hospitals, the traditional primary employer of LPNs and Licensed Vocational Nurses.

Sources:
1. "The U.S. Health Workforce Chartbook Part I: Clinicians" U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis, Washington, DC, November 2013,p. 11 -12.
2. Industry-occupation matrix data, by occupation, published by the Employment Projections Program, U. S. Department of Labor, U.S. Bureau of Labor Statistics, http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/8/15).

Supply and Demand

In 2012, 2.9 million RNs practiced in the United States,[26] according to the Bureau of Labor Statistics (BLS), the RN workforce is expected to grow by 19% from 2012 to 2022 to include more than 500,000 new RNs.[27]

The U.S. had 2.9 million RNs as of 2012.
Of these RNs, approximately 80% were full-time RNs and 20% worked part time.[28]

The number of RNs began decreasing in the 1970s, when women began pursuing careers in fields other than nursing and teaching.[29] The demand for nurses is projected to rise by 21% from 2012 to 2025, while the supply of nurses is anticipated to increase 33%, leading to a projected *excess* supply of RNs by 2025 of approximately 340,000 FTEs.[30] The excess supply projections are due, at least in part, to the dramatic increase in new graduates entering the workforce which increased from 68,000 individuals to more than 150,000 from 2001 to 2013.[31]

26 "The Future of the Nursing Workforce: National- and State-Level Projections, 2012-2025" U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce, National Center for Health Workforce Analysis, Washington, DC, December 2014, p. 2.
27 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/registered-nurses.htm (Accessed 4/9/15), p. 7-8.
28 "Occupational Outlook Handbook: Registered Nurses" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
29 "Nursing, Doctor Numbers Worsen" By Gregory Lopes, The Washington Times, July 27, 2007, http://www.newser.com/archive-science-health-news/1G1-166859372/nursing-doctor-numbers-worsenbusiness.html (Accessed 4/10/09).
30 "The Future of the Nursing Workforce: National- and State-Level Projections, 2012 – 2025" U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce, National Center for Health Workforce Analysis, Washington, DC, December 2014, p. 2, 7.
31 Ibid.

Licensed Practical Nurses and Licensed Vocational Nurses

Description and Scope

LPNs, also known as *LVNs*, comprise another part of the nursing workforce and provide a variety of healthcare services under the supervision of physicians and RNs.[32] In all but two states, these practitioners are called LPNs; in California and Texas, LVN and LPN designations are used interchangeably.[33] For the purpose of this *Guide*, both LPNs and LVNs will be referred to as LPNs. LPNs care for many different patient populations in diverse healthcare settings, however they are not held to the same training requirements as RNs and APRNs and, therefore, are not authorized to provide care with either respective grade of autonomy.[34]

Scope

LPNs work in collaboration with other health professionals to provide personal, preventive, rehabilitative, and other care services to a diverse population in many healthcare settings.[35] LPNs work under the direction of physicians and RNs to diagnose, manage, and treat patients.[36] Although most LPNs are considered generalists, tasks and responsibilities vary depending on the healthcare setting; also, the flexibility of LPN responsibilities varies by state.[37] With experience, some LPNs may be able to supervise nursing aides as a part of their practice. However, LPNs are more limited in their scope of practice than RNs and APRNs. Most LPNs may not perform telephone triage nor may they develop and make changes to patient care plans independent of a supervising practitioner.[38]

Education and Training

Educational requirements for LPNs include: (1) graduation from a state-accredited educational program in practical nursing that is approximately one year in length and (2) successful completion of the *National Council Licensure Examination for Practice Nurses* (NCLEX-PN), offered by the *National Council of State Boards of Nursing* (NCSBN).[39] The typical training

32 "Occupational Outlook Handbook: Licensed Practical and Licensed Vocational Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/licensed-practical-and-licensed-vocational-nurses.htm (Accessed 4/9/15), p. 1.

33 "Nursing Practice Standards for the Licensed Practical/Vocational Nurse" National Federation of Licensed Practical Nurses, Inc., October 2003, http://www.nflpn.org/practice-standards4web.pdf (Accessed 6/2/10), p. 2.

34 "Practical Nurse Scope of Practice White Paper" National Council of State Boards of Nursing, Inc., August 2005, https://www.ncsbn.org/Final_11_05_Practical_Nurse_Scope_Practice_White_Paper.pdf (Accessed 6/2/10), p. 1; see section *Advanced Practice Registered Nurses (APRNs)* and section *Registered Nurses* of Chapter 8 for more detail on RNs and other advanced nursing specialties, respectively.

35 "Nursing Practice Standards for the Licensed Practical/Vocational Nurse" National Federation of Licensed Practical Nurses, Inc., October 2003, http://www.nflpn.org/practice-standards4web.pdf (Accessed 6/2/10), p. 2.

36 "Nursing Practice Standards for the Licensed Practical/Vocational Nurse" National Federation of Licensed Practical Nurses, Inc., October 2003, http://www.nflpn.org/practice-standards4web.pdf (Accessed 6/2/10), p. 2; "Occupational Outlook Handbook: Licensed Practical and Licensed Vocational Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/licensed-practical-and-licensed-vocational-nurses.htm (Accessed 4/9/15), p. 1.

37 "Supply, Demand, and Use of Licensed Practical Nurses" By Jean Ann Seago, et al., Report for Health Resource Services Administration of the Department of Health and Human Services, University of California, San Francisco, November 2004, p. 37.

38 "Practical Nurse Scope of Practice White Paper" National Council of State Boards of Nursing, Inc., August 2005, https://www.ncsbn.org/Final_11_05_Practical_Nurse_Scope_Practice_White_Paper.pdf (Accessed 6/2/10), p. 1.

39 "Nursing Practice Standards for the Licensed Practical/Vocational Nurse" National Federation of Licensed Practical Nurses, Inc., October 2003, http://www.nflpn.org/practice-standards4web.pdf (Accessed 6/2/10), p. 1; "Occupational Outlook Handbook: Licensed Practical and Licensed Vocational Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/licensed-practical-and-licensed-vocational-nurses.htm (Accessed 4/9/15), p. 4.

program includes both theoretical and practical perspectives of nursing, and the NCLEX-PN exam determines competency in several core areas of LPN practice.[40]

Industry Trends

Characteristics and Distribution

The LPN workforce is fairly large, consisting of 738,400 practitioners in 2012.[41] The LPN workforce demographic is similar to the RN workforce and is slanted towards the white female demographic, with 92.4% of the workforce comprised of women and 66.9% comprised of white (non-Hispanic) providers.[42] LPNs also fall predominantly within the 35 to 55 age range.[43] LPNs are employed in diverse care settings, with the majority of LPNs working in the nursing care and hospital settings with the remainder working in physician offices, home health care, and other settings.[44]

Supply and Demand

The LPN workforce is expected to grow by 36% from 2012 to 2025, with demand over the same period growing by only 28%, resulting in an excess supply of LPNs of approximately 59,000 FTEs.[45] However, structural employment trends indicate that demand will outstrip supply in 22 states leading to the possibility of regional shortages, as the LPN workforce adjusts to the geographic variation in demand for LPN services.[46]

THERAPISTS

Description and Scope

Although rehabilitation therapists have been classified as mid-level providers of clinical services,[47] other therapists comprise a subset of licensed technicians and paraprofessionals (see table 9-4 for information related to paraprofessional therapist scope of practice, educational requirements, and specialties).

40 "Occupational Outlook Handbook: Licensed Practical and Licensed Vocational Nurses" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/licensed-practical-and-licensed-vocational-nurses.htm (Accessed 4/9/15), p. 4.
41 Ibid, p. 6.
42 "The U.S. Health Workforce Chartbook Part I: Clinicians" U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis, Washington, DC, November 2013,p. 11 -12.
43 Ibid.
44 Ibid, p. 20-21.
45 "The Future of the Nursing Workforce: National- and State-Level Projections, 2012 – 2025" U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce, National Center for Health Workforce Analysis, Washington, DC, December 2014, p. 3.
46 Ibid, p. 3, 11.
47 See *Rehabilitation Therapists* section of Chapter 8, *Mid-level Provider Practices.*

Table 9-4: Paraprofessional Therapist Specialties and Educational and Training Requirements

Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements	Number of Accredited Programs	Accreditation and Certification Organizations
Radiation Therapist	N/A	N/A	Serves as one part of the radiation therapy treatment team; administers radiation therapy, a treatment option for cancer.	Associate degree or bachelor's degree or certificate in radiation therapy, plus certification, plus annual registration, plus biennial continuing education (minimum), plus licensure (varies by state)	172	JRCERT* (accreditation) ARRT (certification)
Respiratory Therapist	N/A	N/A	Provides medical care for patients with respiratory ailments or cardiopulmonary diseases, including any duties related to the evaluation, treatment, and management of patients.	Associate degree in accredited respiratory therapy program, plus CRT certification, plus licensure (minimum), plus RRT certification	420	CoARC (accreditation) NBRC (certification)

Notes:

* JRCERT: Joint Review Committee on Education in Radiologic Technology; AART: American Registry of Radiologic Technologists; CRT: [Entry-Level] Certified Respiratory Therapist; RRT: Advanced Registered Respiratory Therapist; CoARC: Commission on Accreditation for Respiratory Care; NBRC: National Board for Respiratory Care

** Note that number of accredited programs for radiation therapists is a 2007 estimate, and the number for respiratory therapists is a count provided by the accrediting organization at the time of publication.

Sources by Specialty:

1. "Occupational Outlook Handbook: Radiation Therapists" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
2. Ibid.
3. "Joint Review Committee on Education in Radiologic Technology" JRCERT, 2012, https://portal.jrcertaccreditation.org/summary/accreditedprogramsearch.aspx (Accessed 4/9/15).
4. "ARRT-RECOGNIZED EDUCATIONAL PROGRAMS" The American Registry of Radiologic Technologists, https://www.arrt.org/Education/Educational-Programs (Accessed 4/9/15).

In addition to maintaining records and monitoring patient care, paraprofessional therapists provide clinical care as prescribed by the attending physician or authorized practitioner.[48] The clinical services administered by these therapists require knowledge of complex medical equipment and techniques. They may only administer clinical care in accordance with the direct order(s) of a qualified practitioner.[49]

48 "Scope of Practice for Respiratory Therapists Practicing Under Part B Medicare" American Association for Respiratory Care, http://www.arksrc.org/news/medicarescopeprac0407.pdf (Accessed 6/3/10), p. 1-2; "The Practice Standards for Medical Imaging and Radiation Therapy" American Society of Radiologic Technologists, Albuquerque, NM, 2007, p. 2; "Health Care Careers Directory 2012-2013" American Medical Association Chicago, IL, 40th Edition, 2012, p. 60, 273; "Occupational Outlook Handbook: Radiation Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/radiation-therapists.htm (Accessed 4/9/15), p. 1; "Occupational Outlook Handbook: Respiratory Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (Accessed 4/9/15), p. 1-2.

49 "AARC White Paper on RRT Credential" American Association for Respiratory Care, July 10, 2003, http://www.aarc.org/resources/rrt_credential/index.html (Accessed 6/3/10); "Scope of Practice for Respiratory Therapists Practicing Under Part B Medicare" American Association for Respiratory Care, http://www.arksrc.org/news/medicarescopeprac0407.pdf (Accessed 6/3/10), p. 2.

Education and Training

Education, licensure, and certification requirements not only vary for each type of paraprofessional therapist, but they also differ for every state and employer. In general, minimum educational requirements may include associate-level training through an accredited program, certification, and state licensure.

Specialties

There are two types of therapists categorized as licensed technicians and paraprofessionals: (1) radiation therapists and (2) respiratory therapists.

Radiation Therapists

Scope

Radiation therapists administer *radiation therapy*, a treatment modality for cancer.[50] Radiation therapists are part of the radiation therapy treatment team, which also may include a patient's primary care physician (see the *Primary Care* section of Chapter 7, *Physician Practices*), a radiation oncologist (Chapter 7, *Radiology*), a dosimetrist (see the *Other Licensed Technicians and Paraprofessionals* section), an oncology nurse (see the *Registered Nurses* section, and Table 9-2), and a medical physicist (see the *Radiology* section, of Chapter 7, *Physician Practices*), among others.[51]

Education and Training

Employers typically require an associate or bachelor's degree in radiation therapy or a degree in radiography supplemented by a certificate in radiation therapy.[52] Programs must be accredited by the *American Registry of Radiologic Technologists* (ARRT).[53] Within five years of graduating from an accredited program, radiation therapists must sit for a national certification examination offered by the ARRT.[54] An individual who passes the examination becomes certified as a *Registered Technologist* in radiation therapy.[55] In addition, many states mandate licensure, which may require prior completion of the ARRT certification exam.[56]

50 "The Practice Standards for Medical Imaging and Radiation Therapy" American Society of Radiologic Technologists: Albuquerque, NM, 2007, p. 2; "Occupational Outlook Handbook: Radiation Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/radiation-therapists.htm (Accessed 4/9/15), p. 1.
51 "What You Need to Know About Your Radiation Therapy Treatment Team" American Society of Radiologic Technologists, 2000, p. 1.
52 "Occupational Outlook Handbook: Radiation Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/radiation-therapists.htm (Accessed 4/9/15), p. 1.
53 Ibid, p. 4.
54 "Radiation Therapy: Certification Handbook and Application Materials" American Registry of Radiologic Technologists, 2009, p. 7, 52.
55 Ibid, p. 6, 23.
56 "Licensing Versus Certification and Registration" American Registry of Radiologic Technologists, 2009https://www.arrt.org/licensing/certvslic.htm (Accessed 10/7/09); "Occupational Outlook Handbook: Radiation Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/radiation-therapists.htm (Accessed 4/9/15), p. 4.

Respiratory Therapists

Scope

Respiratory therapists work under the direction of a physician to provide medical care to patients with respiratory ailments or cardiopulmonary diseases.[57] Respiratory therapists perform any duties related to the evaluation, treatment, and management of patients, and they may be responsible for the coordination and supervision of respiratory therapy technicians.[58]

Education and Training

To become a respiratory therapist, individuals must complete the minimum educational requirement of an associate degree in respiratory therapy from a program accredited through the *Commission on Accreditation of Allied Health Education Programs or the Committee on Accreditation for Respiratory Care*.[59] Additionally, all states, with the exception of Alaska, require licensure of respiratory therapists.[60] State licensure requirements may include prior certification through the *National Board of Respiratory Care as an Entry-Level Certified Respiratory Therapist* (CRT) or as an *Advanced Registered Respiratory Therapist* (RRT).[61] Although the CRT credential is all that is required by most employers and state licensure boards, respiratory therapists who achieve the RRT credential, which is considered the "standard of excellence" in respiratory care, often may expand their scope of practice and gain more autonomy while still being required to work under the supervision of a qualified physician.[62]

Industry Trends

Characteristics and Distribution

Nearly 85% of the respiratory therapist workforce practice in a hospital setting.[63] Smaller subsets work in offices of physicians or other health practitioners or in other healthcare or social service settings.[64] Table 9-5 contains specific information related to paraprofessional therapist workforce characteristics.

57 "Occupational Outlook Handbook: Respiratory Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (Accessed 4/9/15), p. 1-2.
58 "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p. 60; "Occupational Outlook Handbook: Respiratory Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (Accessed 4/9/15), p. 3-4.
59 "Occupational Outlook Handbook: Respiratory Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (Accessed 4/9/15), p. 3-4.
60 Ibid.
61 "RRT Examination" National Board for Respiratory Care, 2009, https://www.nbrc.org/Examinations/RRT/tabid/60/Default.aspx (Accessed 10/6/09); "Occupational Outlook Handbook: Respiratory Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (Accessed 4/9/15), p. 3-4.
62 "AARC White Paper on RRT Credential" American Association for Respiratory Care, July 10, 2003, http://www.aarc.org/resources/rrt_credential/index.html (Accessed 6/3/10); "RRT Examination" National Board for Respiratory Care, 2009, https://www.nbrc.org/Examinations/RRT/tabid/60/Default.aspx (Accessed 10/6/09).
63 "The U.S. Health Workforce Chartbook Part IV: Behavioral and Allied Health" U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis, Washington, DC, November 2013, p. 26 -27.
64 Ibid.

Table 9-5: Paraprofessional Therapist Distribution, Characteristics, and Demand

Specialty	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics*	Notes on Demand
Radiation Therapist	19,100	23,600	24.00%	n/a	n/a	Increased demand for services due to the increasing number of elderly people in the population and expected technology advances that will increase the scope and need of radiation therapy for treatment of cancer.
Respiratory Therapist	119,300	142,100	19.00%	Hospitals (84.9%) Offices of various health practitioners (15.1%)	Female (64.9%), White (non-Hispanic) (74.1%), and Age 35-55 (58.9%)	Increase in demand thought to be a result of the growth in middle-aged and elderly population, who are more susceptible to respiratory and cardiopulmonary ailments, requiring the services of respiratory care practitioners.

Sources by Specialty:

1. "The U.S. Health Workforce Chartbook Part IV: Behavioral and Allied Health" U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis, Washington DC, November 2013, p. 26-27.
2. "Industry-occupation matrix data, by occupation" Employment Projections Program, U. S. Department of Labor, U.S. Bureau of Labor Statistics, http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/8/15).

Supply and Demand

Due to the aging demographic and projected growth in technology, the market demand for radiation and respiratory therapists is expected to grow (see Table 9-6).[65] The manpower demand in oncology, namely due to the growing number of elderly patients and advances in the treatment of various types of cancer, will perpetuate expansion of the scope of radiation therapy practice.[66] Because respiratory and cardiopulmonary diseases are most common among the elderly demographic, a continued increase in demand is projected for respiratory therapists.[67]

65 "Occupational Outlook Handbook: Respiratory Therapists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/respiratory-therapists.htm (Accessed 4/9/15), p. 5-6.
66 Ibid.
67 Ibid, p. 6.

Table 9-6: Paraprofessional Technologist Specialties and Educational and Training Requirements

Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements	Number of Accredited Programs**	Accreditation and Certification Organizations*
Medical and Clinical Laboratory Technologist	Medical laboratory technologist or clinical laboratory scientist	Microbiology, Virology, Hematology, Immunology, Transfusion medicine, Clinical chemistry, Endocrinology, Toxicology, Cytogenetics, Molecular diagnostics	Professionals in the field of clinical laboratory science who are primarily responsible for the design, practice, and reporting of clinical testing of bodily fluids and tissues as requested by the attending physician.	Bachelor's degree, plus certification (minimum)	232	NAACLS (accreditation) AMT (certification) AAB (certification) ASCP (certification)
Cardiovascular Technologist	N/A	Invasive cardiovascular technologists, Noninvasive cardiovascular technologists, including (1) Noninvasive cardiology (echocardiography) and (2) Noninvasive peripheral vascular study (vascular ultrasound)	Works under the direction and supervision of a licensed physician to provide diagnostic and therapeutic cardiac and vascular procedures.	Associate degree (minimum), plus additional education, plus certification, plus licensure	59	CAAHEP (accreditation) CCI (certification) ARDMS (certification)
Radiologic Technologist	Radiographer	Sub-disciplines include nuclear medicine technology, radiation therapy, and sonography. Additional certification is available in the following areas: mammography, computerized tomography, magnetic resonance imaging, quality management, bone densitometry, cardiac-interventional radiography, vascular-interventional radiography, sonography, vascular sonography, breast sonography, and radiologist assistant.	Administers diagnostic imaging services involving radiation (for example, x-rays) to patients under the direction of a physician for diagnostic and preventative purposes.	Formal training program (minimum), plus state licensure (forty states), plus certification, plus renewal	619	JRCERT (accreditation) ARRT (certification)
Nuclear Medicine Technologist	N/A	N/A	Administers radionuclide(s) and monitor patient progress in response to the drug.	Formal training program in nuclear technology (minimum), plus certification, plus licensure	87	JRCNMT (accreditation) NMTCB (certification) ARRT (certification)

(continued)

Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements	Number of Accredited Programs**	Accreditation and Certification Organizations*
Surgical Technologist	Scrub, surgical, or operating room technician	With additional training, surgical technologists may expand their role to surgical first assistant (circulator).	Provides surgical care under a surgeon as a part of the operating room team.	Formal training program in surgical technology (minimum), plus certification, plus recertification	453	CAAHEP (accreditation) LCCST (certification) NCCT (certification)

Notes:

* NAACLS: National Accrediting Agency for Clinical Laboratory Sciences; AMT: American Medical Technologists; AAB: American Association of Bioanalysts; ASCP: American Society for Clinical Pathology; CAAHEP: The Commission on Accreditation of Allied Health Education Professionals; CCI: Cardiovascular Credentialing International; ARDMS: American Registry for Diagnostic Medical Sonography; JRCERT: Joint Review Committee on Education in Radiologic Technology; ARRT: The American Registry of Radiologic Technologists; JRCNMT: Joint Review Committee on Education Programs in Nuclear Medicine Technology; NMTCB: Nuclear Medicine Technology Certification Board; LCCST: Liaison Council on Certification for the Surgical Technologist; NCCT: National Center for Competency Testing

** Note that some estimates are current at the time of publication, whereas others are estimates from 2006 and 2007.

Sources by Specialty:

1. "Occupational Outlook Handbook: Clinical Laboratory Technologists and Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Scope of Practice" American Society for Clinical Laboratory Science, August 2, 2001, www.ascls.org/position/scope_of_practice.asp (Accessed 10/15/09), p. 2–3; "NAACLS Accredited and Approved Program Search" National Accrediting Agency for Clinical Laboratory Sciences, 2009, www.naacls.org/search/programs.asp (Accessed 10/20/09), p. 1; "Qualifications" American Medical Technologists, 2009, www.amt1.com/page.asp?i=168 (Accessed 10/20/09), p. 1; "MT(AAB)—Medical Technologist Disciplines and Qualifications" American Association of Bioanalysts, 2006, www.aab.org/mt.htm, (Accessed 10/20/09) p. 1-2; "Technologist Certification" American Society for Clinical Pathology, 2009, www.ascp.org/FunctionalNavigation/certification/GetCertified/TechnologistCertification.aspx (Accessed 10/20/09), p. 1-8; "Guide to Accreditation" National Accrediting Agency for Clinical Laboratory Sciences, 2008, p. 1 (for more information regarding standards for accreditation, please see "Standards of Accredited Educational Programs for the Clinical Laboratory Scientist/Medical Technologist" National Accrediting Agency for Clinical Laboratory Sciences, October 1, 2005, www.naacls.org/PDFviewer.asp?mainUrl=/docs/Standards_cls-mt.pdf (Accessed 10/20/09)).
2. "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p.12; "Occupational Outlook Handbook: Cardiovascular Technologists and Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).; "Standards and Guidelines for the Accreditation of Educational Programs in Cardiovascular Technology" CAAHEP, 2009, p. 1; "CAAHEP Accredited Program Search: [Cardiovascular Technologist]" CAAHEP, 2009, www.caahep.org/Find-An-Accredited-Program/ (Accessed 10/27/09); "CAAHEP Accredited Program Search: [Diagnostic Medical Sonographer]" CAAHEP, 2009, www.caahep.org/Find-An-Accredited-Program/ (Accessed 10/27/09).
3. "Radiation Therapy: Certification Handbook and Application Materials" American Registry of Radiologic Technologists, 2009, p. 5, 23; "Alphabet Soup: A Guide to Organizations in Radiologic Technology" American Society of Radiologic Technologists, 2007, p. 2; "Radiation Therapy: Certification Handbook and Application Materials" American Registry of Radiologic Technologists, 2009, p. 23.
4. "Occupational Outlook Handbook: Nuclear Medicine Technologists" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).; "Essentials and Guidelines for an Accredited Educational Program for the Nuclear Medicine Technologist" Joint Review Committee on Educational Programs in Nuclear Medicine Technology, 2003, p. 1; "Technologist Certification and Licensure" Society of Nuclear Medicine Technologists, 2009, http://interactive.snm.org/index.cfm?PageID=1091&RPID=924 (Accessed 10/15/09), p. 1.
5. "Occupational Outlook Handbook: Surgical Technologists" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p. 112; "Guide to the Recertification Process," National Center for Competency Testing, October 2009, p. 1–2; "CAAHEP Accredited Program Search: [Surgical Technologist]" Commission on Accreditation of Allied Health Education Programs, www.caahep.org/Find-An-Acredited-Program/ (Accessed 11/2/09), p. 1.

TECHNOLOGISTS

Description and Scope

Technologists practice in a variety of disciplines (e.g., cardiology, clinical laboratory sciences, surgery). Although technologists typically utilize more critical thinking skills and have more autonomy than assistants or aides, their role is still entirely aimed at enhancing the provision of *physician* services. As such, technologists are not directly responsible for any direct decision making in the diagnosis, management, or treatment of patients.[68] The role and involvement of technologists in patient care varies by discipline. See Table 9-6 for more detail regarding the specific professions discussed in this section.

Scope

The scope of practice for technologists varies depending on discipline and subspecialty. However, most technologists are responsible for some manner of administrative tasks, as well as preparatory work for and administration of clinical procedures or tests ordered by the attending physician, with varying levels of patient interaction depending on specialty.[69] Additionally, for some specialties (e.g., clinical laboratory sciences), technologists with an appropriate level of education and experience may perform managerial tasks as well.[70] However, technologists are not authorized to autonomously diagnose or treat patients; all procedures must be performed in accordance with an attending physician's orders.[71]

Nuclear medicine technologists are not required to report exclusively to nuclear medicine physicians. According to data reported from a 2005 survey by the Center for Health Workforce Studies at the University at Albany, 35.1% of nuclear medicine technologists worked with other types of physicians.[72] Further, in recent years, there has been a shift in nuclear medicine technologist services to outpatient facilities and mobile or temporary practices. Consequently, nuclear medical technologists have enjoyed an increased level of independence in practice.[73] These trends could indicate a diversification and expansion of nuclear medicine technologist duties and scope of practice and a general shift toward increased autonomy in practice.

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68 "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p. 217; "Scope of Practice" American Society for Clinical Laboratory Science, August 2, 2001, http://www.ascls.org/position/scope_of_pratice.asp, (Accessed 11/16/09); "Medical Technologist: Job Description, Duties and Requirements" Study.com, 2015, http://study.com/articles/Medical_Technologist_Job_Description_Duties_and_Requirements.html (Accessed 4/13/15); "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 1.

69 "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p. 217; "Medical and Clinical Laboratory Technologists and Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/13/15).

70 "Scope of Practice" American Society for Clinical Laboratory Science, August 2, 2001, http://www.ascls.org/position/scope_of_pratice.asp, (Accessed 11/16/09).

71 "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 2-3.

72 "Nuclear Medicine Technologists in the U.S., Findings from a 2005 Survey" The Center for Health Workforce Studies School of Public Health, University of Albany, January 2007, p. 43.

73 "Entry Level Educational Requirements for Nuclear Medicine Technologists: Draft IV" Society of Nuclear Medicine Technologists, http://interactive.snm.org/docs/EntryLevelPositionPaperDraft4.pdf (Accessed 10/15/09).

Education and Training

The minimum training required of technologists is more extensive than the requirements for assistants or aides. Technologists typically are required to complete a formal, accredited training program that results in a certificate or an associate or bachelor's degree. Although certification is voluntary for all specialties, it is generally preferred by employers and for state licensure.[74]

Specialties

Most specialties, including cardiovascular, clinical laboratory, radiologic, and surgical technology, provide opportunities for advanced or specialty certification with additional training.[75]

Industry Trends

Characteristics and Distribution

As suggested below in Table 9-7, hospitals are the largest employer of technologists and provide the majority of jobs. The second largest site of service employing technologists (excluding clinical laboratories) is physician offices.[76] A number of technologists also work in diagnostic laboratories.[77]

74 "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 4-5.

75 "Health Care Careers Directory 2012-2013" The American Medical Association: Chicago, IL, 40th Edition, 2012 p. 217; "Scope of Practice" American Society for Clinical Laboratory Science, August 2, 2001, http://www.ascls.org/position/scope_of_pratice.asp, (Accessed 11/16/09); "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 4-5; see Table 9-6 for a list of subspecialties and accreditation and certification agencies.

76 "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2011 Medical and clinical laboratory technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2012 Medical and clinical laboratory technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2031 Cardiovascular technologists and technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 201, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15) p. 3; "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2033 Nuclear medicine technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2034 Radiologic technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2055 Surgical technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15).

77 Ibid.

Table 9-7: Paraprofessional Technologist Distribution, Characteristics, and Demand

Specialty	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Medical and Clinical Laboratory Technologist	164,300	187,100	14.00%	Hospitals (55.7%), Physician Offices (5.0%), Outpatient Care Center (4.2%), and Colleges and Universities (4.1%)	Female (73.6%), White (non-Hispanic)(62.2%), Black/African American (14.6%)	The aging U.S. population will lead to increased demand for diagnoses of illness like cancer and Type II diabetes, which will lead to increased demand for technologists and healthcare reform will also increase access to care driving increased demand for technologists.
Cardiovascular Technologist	51,600	67,300	30.00%	Hospitals (64.9%), Physician Offices (11.7%), Outpatient Care Centers (5.6%) note: statistics represent all diagnostic related technologists and technicians which include Cardiovascular, Radiological and Nuclear Medicine technologists.	Female (71.1%), White (non-Hispanic) (76.3%), and Black/African American (7.8%). note: statistics represent all diagnostic related technologists and technicians which include Cardiovascular, Radiological and Nuclear Medicine technologists.	While Hospitals primarily employ Cardiovascular, Radiological, and Nuclear Medicine Technologists, rapid growth is expected in physician offices and medical and diagnostic laboratories.
Radiologic Technologist	199,200	240,800	21.00%			
Nuclear Medicine Technologist	20,900	25,100	20.00%			
Surgical Technologist	98,500	127,800	30.00%	N/A	N/A	Improvement in medical technology has led to improvement in surgical safety with a resulting increase in surgical volumes driving increases in demand for Surgical Technologist.

Sources by Specialty:

1. "Occupational Outlook Handbook: Clinical Laboratory Technologists and Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
2. "Occupational Outlook Handbook: Cardiovascular Technologists and Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
3. "Occupational Outlook Handbook: Radiologic Technologists and Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
4. "Occupational Outlook Handbook: Nuclear Medicine Technologists" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
5. "Occupational Outlook Handbook: Surgical Technologists" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Use of a Robotic System as Surgical First Assistant in Advanced Laparoscopic Surgery" By Todd Drasin, Eri Dutson, and Carlos Garcia, Journal of the American College of Surgeons, Vol. 199, No. 3 (September 2004), p. 371; "Competency Assessment and Competence Acquisition: The Advanced Practice Nurse as RN Surgical First Assistant" By Jane Rothrock, Medscape Today, March 21, 2005, www.medscape.com/viewarticle/499689_print (Accessed 11/2/09), p. 1.
6. "U.S. Health Workforce Chartbook" U.S. Department of Health and Human Services, Health Resources and Services Administration, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/chartbook/ (Accessed 4/9/15).

Supply and Demand

Demand for technologist services is expected to grow in the coming years (see Table 9-7).[78] Much of this growth is attributed to the aging demographic, which will require an increased volume of medical services (many of which technologists will supply), because this population will become more susceptible to diseases and disorders requiring medical attention.[79] Additionally, advancing technologies in treatment will drive growth in many of these disciplines.[80] Many of the new technologist jobs created by 2022 will remain in hospitals, indicating a stable employment market for paraprofessional technologists.[81]

CLINICAL TECHNICIANS

Description and Scope

Technicians may provide support services in both clinical and non-clinical fields; licensure status, as well as the description and scope of each area of practice, vary accordingly (see Table 9-8 for information on each licensed *and* unlicensed technician profession). In addition to performing basic administrative tasks, many clinical technicians are competent in a specific scope of clinical procedures and may follow through on a defined plan of care from an independent practitioner. Clinical technicians engage in a significant amount of patient contact and, as such, are either subject to licensure requirements or are moving in the direction of more stringent regulation of professional training standards.[82] As such, licensed *and* otherwise highly educated clinical technicians are covered in this section; a gradient of the various professions, from most to least educational (and licensure) requirements, may be found in Table 9-8. Non-clinical technicians typically are not required to meet particularly stringent educational standards, and none discussed herein are licensed. As such, non-clinical technicians are discussed in *Non-clinical (Unlicensed) Technicians*.

78 "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2034 Radiologic technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 9-2033 Nuclear medicine technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2012 Medical and clinical laboratory technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2031 Cardiovascular technologists and technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2011 Medical and clinical laboratory technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15).

79 "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 6-7.

80 "Occupational Outlook Handbook: Surgical Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/surgical-technologists.htm#tab-6 (Accessed 4/9/15), p. 5-6.

81 "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2034 Radiologic technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 9-2033 Nuclear medicine technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2012 Medical and clinical laboratory technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2031 Cardiovascular technologists and technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2011 Medical and clinical laboratory technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15).

82 "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 1-2; "Occupational Outlook Handbook: Pharmacy Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm (Accessed 4/9/15), p. 1-2.

Table 9-8: Paraprofessional Technician Specialties and Educational and Training Requirements

Services Provided	Licensure Spectrum	Specialties	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Clinical	Licensed	Cardiovascular Technician†	51,600	67,300	30.00%	Hospitals (64.9%), Physician Offices (11.7%), Outpatient Care Centers (5.6%) note: statistics represent all diagnostic related technologists and technicians which include Cardiovascular, Radiological and Nuclear Medicine technicians.	Female (71.1%), White (non-Hispanic) (76.3%), and Black/African American (7.8%). note: statistics represent all diagnostic related technologists and technicians which include Cardiovascular and Radiological technicians.	CAAHEP (accreditation) CCI certification)
		Radiologic Technician†	199,200	240,800	21.00%			JRCERT (accreditation) ARRT (certification)
		Respiratory Therapy Technician†	13,600	15,900	17.00%	Hospitals (84.9%) Offices of various health practitioners (15.1%)	Female (64.9%), White (non-Hispanic) (74.1%), and Age 35-55 Years (58.9%)	Increase in demand thought to be a result of the growth in middle-aged and elderly population, who are more susceptible to respiratory and cardiopulmonary ailments, requiring the services of respiratory care practitioners.
	Highly Educated, Registered, or Certified	Emergency Medical Technician (EMT)	239,100	294,400	23.00%	Other Health Care Services (51.7%), Hospitals (20.2%), and Justice, Public Order, and Safety Activities (15.5%).	Male (69.1%), White (non-Hispanic) (79.7%), Black/African American (6.3%)	Growth in the elderly population will lead to increased incidence of medical emergencies and increased demand for EMT services

(continued)

Services Provided	Licensure Spectrum	Specialties	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Clinical	Licensed	Pharmacy Technician	355,300	426,100	20.00%	Pharmacies and Drug Stores (42.0%), Hospitals (26.6%), Veterinary Services (15.4%). Note: includes all Health Diagnosing and Treating Practitioner Support Technologists and Technicians which includes Pharmacy, Psychiatric, and Dietetic Technicians	Female (79.5%), White (non-Hispanic) (67.5%, Black/African American (12.8%) Note: includes all Health Diagnosing and Treating Practitioner Support Technologists and Technicians which includes Pharmacy, Psychiatric, and Dietetic Technicians	The aging population, along with the improved access to care resulting from healthcare reform will lead to increased demand for pharmacy technician service.
		Psychiatric Technician	71,000	73,800	4.00%			The aging population will likely lead to increased incidence of age related mental and cognitive disease increasing demand for psychiatric technician services.
		Dietetic Technician	25,100	29,600	18.00%			The growing obesity pandemic in the U.S. will likely increase demand for dietetic technician services.
Non-clinical	Unlicensed	Medical Records and Health Information Technician	186,300	227,500	22.00%	Hospitals (42.4%), Physician Offices (18.0%), Nursing Care Facilities (6.5%), and, Outpatient Care Centers (8.4%).	Female (88.8%), White (non-Hispanic) (62.1%); and Black/African American (16.1%)	The increased utilization of healthcare services coincident with the aging population and the increase in access to healthcare resulting from healthcare reform will drive increased demand for Medical Records and Health Information Technician services.

Services Provided	Licensure Spectrum	Specialties	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Non-clinical	Unlicensed	Clinical Laboratory Technician	161,500	209,400	30.00%	Hospitals (55.7%), Physician Offices (5.0%), Outpatient Care Centers (4.2%), and Colleges and Universities (4.1%)	Female (73.6%), White (non-Hispanic) 62.2%, and Black/African American (14.6%).	The aging U.S. population will lead to increased demand for diagnoses of illness like cancer and Type II diabetes, which will lead to increased demand for technologists and healthcare reform will also increase access to care driving increased demand for clinical laboratory technicians
		Occupational Health and Safety Technicians	12,600	13,900	11.00%	N/A	N/A	Growth is caused by technological advancements with new regulations and precautions that must be enforced
		Orthotics and Prosthetics Technician	8,500	11,500	36.00%	N/A	N/A	Growth in demand for Orthotics and Prosthetics Technicians will be largely driven by the needs of an aging population.

(continued)

Notes:

* NAACLS: National Accrediting Agency for Clinical Laboratory Sciences; AAB: American Association of Bioanalysts; AMT: American Medical Technologists; ASCP: American Society for Clinical Pathology; CAAHEP: The Committee on Accreditation for Allied Health Education Programs; CCI: Cardiovascular Credentialing International; JRCERT: Joint Review Committee on Education in Radiologic Technology; ARRT: The American Registry of Radiologic Technologists; NREMT: National Registry of Emergency Medical Technicians; ACEND: Accreditation Council for Education in Nutrition and Dietetics; CDR: Commission on Dietetic Registration; ASHP: American Society of Health-System Pharmacists; PTCB: Pharmacy Technician Certification Board; AAPT: American Association of Psychiatric Technicians; ICPT: Institute for the Certification of Pharmacy Technicians; CoARC: Committee on Accreditation for Respiratory Care; CAHIIM: Commission on Accreditation for Health Informatics and Information Management Education; AHIMA: American Health Information Management Association; NCOPE: National Commission on Orthotic and Prosthetic Education; ABCOP: American Board for Certification in Orthotics and Prosthetics

** Note that not all estimates of accredited programs are for the same time period; also, accredited programs for cardiovascular and radiologic technicians are the same as those for cardiovascular technologists and radiographers (radiology technologists), respectively. Also, note that not all reported dietetic technician programs are accredited at the time of publication.

† Note that the titles of cardiovascular and radiologic technologists and technicians are often interchanged and they often perform the same procedures in many cases, so they are not given much differentiation for the purpose of this Guide. Additionally, although respiratory therapists typically are given more responsibility, many of their duties overlap with those of respiratory therapist technicians and little distinction is made between educational requirements of each.

†† n/a: not available or not applicable

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2. "Occupational Outlook Handbook: Radiologic Technologists and Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
3. "Occupational Outlook Handbook: Respiratory Therapists" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "CAAHEP Accredited Program Search: Respiratory Therapy" CAAHEP, 2009, www.caahep.org/Find-An-Accredited-Program (Accessed 11/2/09).
4. "Occupational Outlook Handbook: Emergency Medical Technicians and Paramedics" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/ home.htm (Accessed 4/9/15); "CAAHEP Accredited Program Search: Emergency Medical Technician-Paramedic" CAAHEP, 2009, www.caahep.org/Find-An-Accredited-Program (Accessed 11/12/09).
5. "Occupational Outlook Handbook: Pharmacy Technician" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).; "Pharmacy Technician" American Medical Association, Health Care Careers Handbook, 37th edition, 2009-2010, p. 414; "Pharmacy Technician Training Program Directory" ASHP, 2008, http://accred.ashp.org/ aps/pages/directory/technicianProgramDirectory.aspx (Accessed 11/12/09).
6. "What is a Psychiatric Technician?" By AAPT, 2007, www.psychteechs.org/about.shtml (Accessed 11/16/09), p. 1; "Summary Report for 29-2053.00 Psychiatric Technicians", O*NET OnLine, 2008, http://online.onetcenter.org/link/summary/29-2053.00 (Accessed 11/16/09), p. 3; "The Certification Process" AAPT, 2007, www.psychtechs.org/cert.shtml (Accessed November 25, 2009), p. 1.
7. "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p. 239; "Dietetic Technician Programs" American Dietetic Association, 11/2/09, www.eatrightorg/ cps/rde/xchg/ada/hs.xsl/career_1748_ENU_HTML.htm (Accessed 11/12/09).
8. "Occupational Outlook Handbook: Medical Records and Health Information Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/ healthcare/home.htm (Accessed 4/9/15); "Accredited Program Directory" CAHIIM, 2009, www.cahiim.org/accredpgms.asp (Accessed 11/12/09).
9. "Occupational Outlook Handbook: Clinical Laboratory Technologists and Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ ooh/healthcare/home.htm (Accessed 4/9/15); "NAACLS Accredited and Approved Program Search" NAACLS, 2009, www.naacls.org/search/programs.asp (Accessed 11/12/09), p. 1.
10. "Occupational Outlook Handbook: Medical, Dental, and Ophthalmic Laboratory Technicians" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "List of Schools: Orthotic and Prosthetic Practitioner Programs" NCOPE, 2009, www.ncope.org/info_students/schools.asp (Accessed 11/12/09).

Scope

Although the specific scopes of practice assigned to technicians vary by specialty, clinical technicians are trained to exhibit competence in a certain technical skill set. Often, the literature uses the titles of "technician" and "technologist" interchangeably, namely with regard to those paraprofessionals who practice in a clinical setting. Within the same clinical specialty area, technician and technologist roles may overlap significantly. All clinical technicians act as extenders for independent practitioners. Other than day-to-day duties, which vary by specialty, duties performed by clinical technicians include (1) basic administrative duties, for example, scheduling appointments, ordering tests, and reviewing and updating patient files; (2) assisting practitioners with preparation for and administration of clinical procedures (when appropriate); (3) monitoring patient vitals; and (4) operating on, maintaining, or repairing equipment.[83]

83 "Orthotics Prosthetics & Pedorthics: Scope of Practice" American Board for Certification in Orthotics, Alexandria, VA: Prosthetics and Pedorthics, Inc., 2009, p. 17; "What is a Psychiatric Technician?" American Association of Psychiatric Technicians, 2007, http://www.psychtechs.org/about.shtml (Accessed 11/16/09); "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-

Additional duties may be limited to those tasks that may be safely performed under a certain level of medical oversight.[84]

Education and Training

Although educational requirements vary for each clinical specialty, clinical technicians are required to complete formal degree training through an accredited program and must at least be certified or registered to practice in their particular field. However, other than professions that require licensure in most states (that is, cardiovascular technicians, radiologic technicians, and respiratory therapy technicians), technician certification or registration in other professions (that is, emergency medical technicians) may be state mandated or may be shifting toward increased regulatory stringency (the spectrum of educational expectations is demonstrated in Table 9-8). Though some clinical positions are unlicensed (for example, pharmacy technicians), industry trends suggest their scopes of practice may need to be expanded and, as such, they will need to be regulated more closely.[85] It is for this reason that these unlicensed clinical technicians are being considered in this *Guide*, because trends toward more formal education, expanded scope of practice, and workforce strain meet demand suggest that, like many of their paraprofessional and mid-level counterparts, they will continue to see increases in educational standards. Accreditation committees that oversee the education and training programs are available for all clinical technician specialties (see Table 9-8 for the number of accredited training programs available per specialty).

Industry Trends

Characteristics and Distribution

Four of the seven clinical technician specialties listed in Tables 9-8 and 9-9 are predominantly based in the hospital setting. However, the various specialty roles filled by technicians (for example, pharmacy technicians and emergency medical technicians) afford them the option to practice in more specialized sites of services, if they so choose. Additionally, the number of technicians varies greatly by specialty, from slightly more than 12,000 orthotics and prosthetics technicians to more than 285,000 pharmacy technicians in 2006.[86] For more information on each technician population, see table 9-9.

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technologists-and-technicians.htm (Accessed 4/9/15), p. 1-2; "Occupational Outlook Handbook: Pharmacy Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm (Accessed 4/9/15), p. 1-2.

84 "National EMS Scope of Practice Model" The National Highway Traffic Safety Administration, February 2007, http://www.nasemsd.org/documents/FINALEMSSept2006_PMS314.pdf (Accessed 6/2/10), p. 24-25, 27

85 "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 4-5; "Occupational Outlook Handbook: Pharmacy Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm (Accessed 4/9/15), p. 4-5.

86 "Occupational Outlook Handbook: Pharmacy Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm (Accessed 4/9/15), p. 6.

Table 9-9: Paraprofessional Technician Distribution, Characteristics, and Demand

Services Provided	Licensure Spectrum	Specialties	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Clinical	Licensed	Cardiovascular Technician†	51,600	67,300	30.00%	Hospitals (64.9%), Physician Offices (11.7%), Outpatient Care Centers (5.6%) Note: statistics represent all diagnostic related technologists and technicians which include Cardiovascular, Radiological and Nuclear Medicine technicians.	Female (71.1%), White (non-Hispanic) (76.3%), and Black/African American (7.8%). Note: statistics represent all diagnostic related technologists and technicians which include Cardiovascular and Radiological technicians.	CAAHEP (accreditation) CCI certification)
		Radiologic Technician†	199,200	240,800	21.00%			JRCERT (accreditation) ARRT (certification)
		Respiratory Therapy Technician†	13,600	15,900	17.00%	Hospitals (84.9%) Offices of various health practitioners (15.1%)	Female (64.9%), White (non-Hispanic) (74.1%), and Age 35-55 Years (58.9%)	Increase in demand thought to be a result of the growth in middle-aged and elderly population, who are more susceptible to respiratory and cardiopulmonary ailments, requiring the services of respiratory care practitioners.

Services Provided	Licensure Spectrum	Specialties	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Clinical	Highly Educated, Registered, or Certified	Emergency Medical Technician (EMT)	239,100	294,400	23.00%	Other Health Care Services (51.7%), Hospitals (20.2%), and Justice, Public Order, and Safety Activities (15.5%).	Male (69.1%), White (non-Hispanic) (79.7%), Black/African American (6.3%)	Growth in the elderly population will lead to increased incidence of medical emergencies and increased demand for EMT services
		Pharmacy Technician	355,300	426,100	20.00%	Pharmacies and Drug Stores (42.0%), Hospitals (26.6%), Veterinary Services (15.4%). Note: includes all Health Diagnosing and Treating Practitioner Support Technologists and Technicians which includes Pharmacy, Psychiatric, and Dietetic Technicians	Female (79.5%), White (non-Hispanic) (67.5%, Black/African American (12.8%) Note: includes all Health Diagnosing and Treating Practitioner Support Technologists and Technicians which includes Pharmacy, Psychiatric, and Dietetic Technicians	The aging population, along with the improved access to care resulting from healthcare reform will lead to increased demand for pharmacy technician service.
		Psychiatric Technician	71,000	73,800	4.00%			The aging population will likely lead to increased incidence of age related mental and cognitive disease increasing demand for psychiatric technician services.
		Dietetic Technician	25,100	29,600	18.00%			The growing obesity pandemic in the U.S. will likely increase demand for dietetic technician services.

(continued)

Services Provided	Licensure Spectrum	Specialties	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Non-clinical	Unlicensed	Medical Records and Health Information Technician	186,300	227,500	22.00%	Hospitals (42.4%), Physician Offices (18.0%), Nursing Care Facilities (6.5%), and, Outpatient Care Centers (8.4%).	Female (88.8%), White (non-Hispanic) (62.1%); and Black/African American (16.1%)	The increased utilization of healthcare services coincident with the aging population and the increase in access to healthcare resulting from healthcare reform will drive increased demand for Medical Records and Health Information Technician services.
		Clinical Laboratory Technician	161,500	209,400	30.00%	Hospitals (55.7%), Physician Offices (5.0%), Outpatient Care Centers (4.2%), and Colleges and Universities (4.1%)	Female (73.6%), White (non-Hispanic) 62.2%, and Black/African American (14.6%).	The aging U.S. population will lead to increased demand for diagnoses of illness like cancer and Type II diabetes, which will lead to increased demand for technologists and healthcare reform will also increase access to care driving increased demand for clinical laboratory technicians
		Occupational Health and Safety Technicians	12,600	13,900	11.00%	N/A	N/A	Growth is caused by technological advancements with new regulations and precautions that must be enforced
		Orthotics and Prosthetics Technician	8,500	11,500	36.00%	N/A	N/A	Growth in demand for Orthotics and Prosthetics Technicians will be largely driven by the needs of an aging population.

* Not all estimates are limited strictly to the position listed (for example, workforce estimate for cardiovascular technician is based on workforce estimates for cardiovascular technologists and technicians).

Sources by Specialty:

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Supply and Demand

Many of these professions are expected to experience a growth in demand for services from 2012 to 2022 due to (1) advances in technology, which may allow for better detection, treatment, or both and may result in an increased case load and (2) an increased demand for services from the growing elderly population, which suffers a disproportionate share of various medical conditions and, therefore, comprises a large portion of the demand for medical services provided by these professionals.[87]

CLINICAL ASSISTANTS

Description and Scope

Similar to the technician workforce, the assistant workforce is comprised of *clinical* and *non-clinical* practitioners, with the most significant differences residing in the scope of services they provide and, therefore, the training they are required to complete. Tables 9-10 and 9-11 on the following pages demonstrate the gradient of assistants, with those of high current and projected clinical utility being held to higher educational standards and, if not licensure, some level of certification.[88] These clinical assistants work under the direct control and supervision of autonomous healthcare professionals in their respective field (i.e., physicians and authorized non-physician practitioners) to provide administrative, clinical, and technical services, often as a

87 "Occupational Outlook Handbook: Pharmacy Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm (Accessed 4/9/15), p. 6; "Occupational Outlook Handbook: Surgical Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/surgical-technologists.htm#tab-6 (Accessed 4/9/15), p. 6; "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 6-7.

88 Non-clinical assistants are discussed in the *Non-Clinical (Unlicensed) Assistants* section.

part of a patient care team.[89] In order to enhance the quality and efficiency of patient care, assistants provide support services as extenders of physicians and authorized non-physician practitioners, as well as liaisons between these autonomous practitioners and their patients (Table 9-10 includes specific information about each type of assistant, specifically related to their scope and educational requirements).[90]

89 "Statement on the Anesthesia Care Team, approved by the ASA House of Delegates on October 18, 2006, and last amended on October 22, 2008" American Society of Anesthesiologists, http://www.anesthesiacareteam.com/ (Accessed 6/2/10). ; "Occupational Outlook Handbook: Pharmacy Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm (Accessed 4/9/15), p. 1-2; "Occupational Outlook Handbook: Medical and Clinical Laboratory Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm (Accessed 4/9/15), p. 1-2.

90 "Services of a certified registered nurse anesthetist or an anesthesiologist's assistant: Basic rule and definitions" 42 C.F.R. § 485.69 (October 1, 2004); "Standards and Guidelines for the Accreditation of Educational Programs for the Anesthesiologist Assistant" American Academy of Anesthesiologist Assistants, American Society of Anesthesiologists, and Commission on Accreditation of Allied Health Education Programs, 2009, p. 1; "The Radiologist Assistant: Improving Patient Care While Providing Work Force Solutions" Advanced Practice Advisory Panel, March 9-10, 2002, p. 2.

Table 9-10: Paraprofessional Assistant Specialties and Educational and Training Requirements

Services Provided	Licensure Spectrum	Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements	Number of Accredited Programs**	Accreditation and Certification Organizations*
Clinical	Licensed in some states	Anesthesiologist Assistant (AA)	N/A	N/A	Works under a physician and within a multidisciplinary team responsible for all aspects of anesthesiology care related to a patient's case.	Bachelor's degree, plus a two-year accredited AA master's-level educational program, plus certification, plus continuing education, plus licensure (eighteen states)	10	CAAHEP (accreditation) NCCAA (certification)
		Occupational Therapist Assistant (OTA)	N/A	N/A	Works under a licensed occupational therapist to assist in rehabilitative treatment and restoration of a patient's mental, physical, emotional, or developmental wellbeing	Associate degree or accredited OTA education program, plus certification exam, plus licensure, registration, or continuing education (varies by state)	211	ACOTE (accreditation)
		Physical Therapist Assistant (PTA)	N/A	May specialize by specific patient group (for example, geriatric, pediatric) or by type of ailment (for example, sports injuries)	Works under the supervision of a physical therapist to aid patients in regaining mobility and physical function following trauma or to cope with a disabling condition.	Associate degree from accredited PTA education program, plus national certification exam, plus state licensure, registration, or certification (varies by state)	302	CAPTE (accreditation)

(continued)

Services Provided	Licensure Spectrum	Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements	Number of Accredited Programs**	Accreditation and Certification Organizations*
Clinical	Highly educated, registered, certified	Radiologist Assistant	N/A	N/A	"Advanced-level radiologic technologist" who performs a variety of clinical imaging procedures under radiologist supervision for the purpose of extending the efficiency and care of the radiologist.	Accredited education program at baccalaureate level, plus certification (minimum)	9	ARRT (certification)
		Dental Assistant (DA)	N/A	With advanced certification, DAs may perform radiological procedures (for example, x-rays)	Works under the direction of a dentist to provide administrative, laboratory, or patient care tasks in the field of dentistry.	High school diploma, plus on-the-job training (minimum, dependent on state), plus a one-year or longer accredited DA training program, plus certification, plus recertification or continuing education	274	CODA (accreditation) DANB (certification)
		Medical Assistant (MA)	N/A	In larger offices, MAs may specialize (for example, ophthalmic MA, optometric assistant, podiatric MA)	Assists physicians in general administrative and clinical capacities and may work in a variety of clinical settings. Acts as "liaison" between patient and physician.	High school diploma (minimum), plus accredited MA education training program, plus certification	571	CAAHEP (accreditation) ABHES (accreditation) AMT (certification) AMAA (certification)

Services Provided	Licensure Spectrum	Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements	Number of Accredited Programs**	Accreditation and Certification Organizations*
Non-clinical	Unlicensed	Social and Human Service Assistant	Community Health Worker (CHW)	CHW is an umbrella title for dozens of positions that are classified under the 21-1093 Standard Occupational Classification Code. Specialty is often dependent upon the work setting.	Assists professionals in various healthcare fields (for example, psychiatry, nursing, psychology, physical therapy, and social work) to provide a wide range of services to clients in order to increase their quality of life.	High school diploma, plus on-the-job training (minimum, dependent on specialty), plus a two- or four-year program in a human service, social, or behavioral science program, plus experience	N/A	N/A

Notes:

* CAAHEP: The Commission on Accreditation of Allied Health Educational Programs; NCCAA: National Commission for Certification of Anesthesiologist Assistants; ACOTE: Accreditation Council for Occupational Therapy Education; CAPTE: Commission on Accreditation in Physical Therapy Education; CODA: Commission on Dental Accreditation; DANB: Dental Assisting National Board, Inc.; ABHES: Accrediting Bureau of Health Education Schools; AMT: American Medical Technologists; AMAA: American Association of Medical Assistants; ARRT: The American Registry of Radiologic Technologists.

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1. "Statement on the Anesthesia Care Team" Approved by the ASA House of Delegates on October 18, 2006, and last amended on October 22, 2008, p. 1; "Services of a certified registered nurse anesthetist or an anesthesiologist's assistant: Basic rule and definitions" 42 C.F.R. § 410.69(b); "Basic Definitions & Information: Who are Anesthesiologist Assistants (AAs)?" American Society of Anesthesiologists, http://www.asahq.org/providers/aadefinition.htm (Accessed October 2, 2009), p. 1; "Standards and Guidelines for the Accreditation of Educational Programs for the Anesthesiologist Assistant", adopted by the American Academy of Anesthesiologist Assistants, American Society of Anesthesiologists, and Commission on Accreditation of Allied Health Education Programs, past revision in 2009; "National Commission: History and Operations", National Commission for Certification of Anesthesiologist Assistants, http://www.aa-nccaa.org/National-Commission.php (Accessed 10/2/09), p. 1; "Education and Certification: Where are AA education programs located?" American Society of Anesthesiologists, http://www.anesthetist.org/faqs#educationprograms (Accessed 4/9/15).
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3. "Occupational Outlook Handbook: Physical Therapist Assistants and Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Personnel qualifications" 42 C.F.R. § 484.4, p. 115; "Occupational Outlook Handbook: Physical Therapist Assistants and Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "APTA Background Sheet 2009: The Physical Therapist Assistant" American Physical Therapy Association, 2009, p. 1.
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7. "Composition of the Frontline Health and Health Care Workforce" By Jennifer Schindel and Kim Solomon, Health Workforce Solutions LLC, The Robert Wood Johnson Foundation, September 2005, p. 11; "Occupational Outlook Handbook: Social and Human Service Assistants" Bureau of Labor Statistics 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Defining the Frontline Workforce" Health Workforce Solutions, September 2005, p. 13-14, 45-46.

Scope

The scope of practice for assistants varies according to state legislation, the discipline, and educational and training prerequisites. However, common duties and responsibilities assigned to clinical assistants may include: (1) obtaining health history and maintaining patient health records; (2) preparing patients for examination (specific related duties will vary according to specialty); (3) providing patient education; (4) conducting appropriate laboratory or clinical procedures as appropriate; and (5) monitoring patient care throughout treatment, all of which is completed within the scope of the attending caregiver's orders.[91] Although assistants may contribute to the diagnosis or determination and modification of treatment or rehabilitation, they *must remain supervised* and *are not responsible* for providing any diagnostic, therapeutic, or management services requiring substantial medical knowledge or expertise.[92]

Education and Training

The educational and training requirements for clinical assistants vary by type and often depend on the degree of difficulty or responsibility the specific profession entails (see Table 9-10 for educational requirements by specialty). Regardless of any disparities in prerequisite training, most assistants receive some level of supplemental training at the time of employment. Employers are becoming increasingly preferential to applicants who have formal education or experience beyond high school.[93] Additionally, complementary and accredited certification programs exist for all clinical assistant professions.[94]

Industry Trends

Characteristics and Distribution

Clinical assistants are employed in a variety of settings, including general and specialty or surgical hospitals, offices of health practitioners (e.g., physicians, occupational therapists, and dentists), and outpatient care centers.[95] State licensure and practice requirements influence the

91 "Radiologist Assistant Role Delineation" American Registry of Radiologic Technologists, January 2005, https://www.arrt.org/radasst/finalraroledelineation.pdf (Accessed 6/3/10), p. 3-5; "Standards and Guidelines for the Accreditation of Educational Programs for the Anesthesiologist Assistant" American Academy of Anesthesiologist Assistants, American Society of Anesthesiologists, and Commission on Accreditation of Allied Health Education Programs, 2009, p. 2; "Standards of Practice for Occupational Therapy" American Occupational Therapy Association, 2005, p. 3-4; "Occupational Outlook Handbook: Medical Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-assistants.htm#tab-1 (Accessed 4/9/15), p. 1-2.

92 "ACR ASRT Joint Policy Statement—Radiologist Assistant Roles and Responsibilities" American College of Radiology, May 2003, http://www.acr.org/SecondaryMainMenuCategories/quality_safety/RadiologistAssistant/ACRASRTJointPolicyStatementRadiologistAssistantRolesandResponsibilitiesDoc6.aspx (Accessed 6/3/10); "The Scope and Practice of Nurse Anesthetists: Recommended Scope of Practice of Nurse Anesthetists and Anesthesiologist Assistants" American Society of Anesthesiologists, January 2004, http://www.asahq.org/Washington/nurseanesscope.pdf (Accessed 6/3/10), p. 13-14; "Occupational Outlook Handbook: Medical Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-assistants.htm#tab-1 (Accessed 4/9/15).

93 "Occupational Outlook Handbook: Medical Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-assistants.htm#tab-1 (Accessed 4/9/15).

94 "APTA Background Sheet 2009: The Physical Therapist Assistant" American Physical Therapy Association, 2009; "CAAHEP Accredited Program Search" Commission on Accreditation of Allied Health Education Programs, http://www.caahep. org/Find-An-Accredited-Program/ (Accessed 10/5/09); "How Do I Become a Certified Medical Assistant?" Online Medical Assistant Programs, 2014, http://www.onlinemedicalassistantprograms.net/how-to-become/ (Accessed 4/13/15); "Education & Certification: Where are AA Education Programs Located?" American Society of Anesthesiologists, http://www.asahq.org/providers/eduandcertification.htm (Accessed 10/4/09); "Radiologist Assistant Certification" By Edward I. Bluth and Jerry B. Reid, Journal of the American College of Radiology, Vol. 1, No. 6 (June 2004), p. 400; "Occupational Outlook Handbook: Medical Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-assistants.htm#tab-1 (Accessed 4/9/15), p. 4-5.

95 "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p. 215.

distribution of clinical assistants in some practice areas. *Anesthesiology assistants*, for example, are only recognized to practice in eighteen states,[96] and practice privileges differ by state for both anesthesiologist and dental assistants (i.e., some states' legislation regulates the specific duties performed by assistants, while other states regulate practice by delegation of the supervising anesthesiologist or dentist).[97] Additionally, the number of practicing assistants varies by profession. For an estimate of the paraprofessional assistant workforce in 2012 and characteristics of personnel and work settings, see Table 9-11.

96 "Facts about AAs" American Academy of Anesthesiologist Assistants, http://www.anesthetist.org/factsaboutaas/ (Accessed 10/2/09).
97 Ibid.

Table 9-11: Paraprofessional Assistant Distribution, Characteristics, and Demand

Services Provided	Licensure Status	Specialty	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Clinical	Licensed in some states	Anesthesiologist Assistant (AA)*	Approximately 1,000 Note: 2013 estimate, see footnote 8 to this table.	N/A	N/A	Facilities performing various specialty surgeries and trauma care (at the time of publication, AAs are only licensed to work in eighteen states)	N/A	AAs may help fill gap produced by lack of anesthesia providers in the current and future healthcare market.
		Occupational Therapist Assistant (OTA)	30,300	43,200	430%	N/A	N/A	Expecting dramatic increase in demand due to the aging baby boomer population and to counteract effects of decreasing cost of services and increasing case load. OTAs are ranked seventy-second of the 150 best recession-proof jobs; ranked twenty-fourth as one of the fastest-growing recession-proof jobs.
		Physical Therapist Assistant	71,400	100,700	41.00%	N/A	N/A	Increasing patient base requiring rehabilitative services due to advancing technology (for example, aging baby boomers will develop conditions due to age and trauma victims with increased chances of survival); PTAs will help to relieve increased case load of physical therapists and decrease cost of service.

Services Provided	Licensure Status	Specialty	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Clinical	Highly educated, registered/, or certified	Radiologist Assistant (RA)	N/A	N/A	N/A	Due to the similarity in function, RAs will most likely work in similar venues as radiological technologists (that is, hospitals, physician offices, ambulatory care services, and diagnostic or medical laboratories).	N/A	Increasing number of the elderly and advances in technology drive increase in demand for services, which remain unfilled as residency program graduates have remained stagnant during the years, increasing demand for RA services.
		Dental Assistant	303,200	377,600	25.00%	Dentist offices (93.1%)	Male (75.9%), White (non-Hispanic) (75.8%), Black/African American (3.2%)	Increasing number of aging baby boomers, correlated with longer retention of natural teeth by the older generation and increase in preventative dental care for the younger generation will counteract increasing case loads by dentists, who can spend time on more complex cases.
		Medical Assistant	560,800	723,700	29.00%	Physician Offices (25.3%), Hospitals (24.8%), Outpatient Care Center (7.7%), Nursing Care Facilities (6.9%) Note: Includes all Medical Assistants and Other Healthcare Support Occupations	Female (88.5%), White (non-Hispanic) (60.2%), Black/African American (14.9%) Note: Includes all Medical Assistants and Other Healthcare Support Occupations	Growth of supporting personnel for medical services spurred by aging the baby boomer population and advancing healthcare technology.
Non-clinical	Unlicensed	Social and Human Services Assistant	372,700	453,900	22.00%	N/A	N/A	Growing demand from increasing elderly population needing geriatric and independent or assisted care services; disabled, homeless, other people in challenging social situations requiring public sector aid; private sector and government services to provide same services as social workers for lower cost.

(continued)

Sources by Specialty:

1. "A Study of Anesthesiology Assistants" Legislative Research Commission, February 2007, p. vii, 12; "Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012, p. 2; "Facts about AAs" American Academy of Anesthesiologist Assistants, http://www.anesthetist.org/factsaboutaas/ (Accessed 10/2/09), p. 3.
2. "Occupational Outlook Handbook: Occupational Therapist Assistants and Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
3. "Occupational Outlook Handbook: Physical Therapist Assistants and Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
4. "ACR and ASRT Development of the Radiologist Assistant: Concept, Roles, and Responsibilities" By Charles D. Williams, Brad Short, Journal of American College of Radiology, Vol. 1, No. 6 (June 2004), p. 395; "Radiologist Assistant Certification" By Edward I. Bluth, Jerry B. Reid, Journal of American College of Radiology, Vol. 1, No. 6 (June 2004), p. 399; "ACR Intersociety Conference 2003: Radiologist Assistants and Other Radiologist Extenders" By N. Reed Dunnick, Journal of American College of Radiology, Vol. 1, No. 6 (June 2004), p. 386-387.
5. "Occupational Outlook Handbook: Dental Assistants" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
6. "Medical Assistant" American Medical Technologists, 2009, http://www.amt1.com/page.asp?i=159 (Accessed 10/5/09), p. 1-2.
7. "Occupational Outlook Handbook: Social and Human Service Assistants" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
8. "The Anesthesiologist Workforce in 2013, A Final Briefing to the American Society of Anesthesiologists" By Matthew Baird, Lindsay Daugherty, Krishna B. Kumar, Aziza Arifkhanova, RAND Corporation, Washington DC, 2014, p. 32.

Supply and Demand

In the coming years, the clinical assistant workforce will likely experience an increase in demand.[98] For many of these positions, growth in patient demand for services is due to one or more of the following: (1) growth in the aging baby boomer population and, as a result, an increase in age-related diseases and disabilities; (2) current and future healthcare workforce shortages (e.g., the anesthesiologist workforce); (3) pressure to reduce healthcare spending by allowing assistants to provide more routine care, which allows independent healthcare practitioners to concentrate on more complex cases; and (4) advances in technology that have increased the standards for life expectancy, morbidity, and mortality, thereby increasing the need for rehabilitative services, dental services, medical services, or a combination of these.[99]

As a result, the job outlook for assistants appears to be favorable. The occupational therapist assistant profession is considered among the most fruitful jobs during the recession; in 2008, this field was ranked 72 out of 150 "recession-proof" jobs and, of these occupations, was the 24th fastest growing job.[100] For additional statistics regarding the increase in demand for assistants, see Table 9-12.

> The career of occupational therapist assistant, in particular, is considered one of the best "*recession-proof*" jobs, and, in 2008, it was ranked 72 out of 150 "*recession-proof*" jobs and, of these occupations, was the 24th fastest growing job.
>
> ***the American Occupational Therapy Association, October 21, 2008.***

98 "Occupational Outlook Handbook: Medical Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-assistants.htm#tab-1 (Accessed 4/9/15), p. 5-6.

99 "ACR and ASRT Development of the Radiologist Assistant: Concept, Roles, and Responsibilities" By Charles D. Williams and Brad Short, Journal of the American College of Radiology, Vol. 1, No. 6 (June 2004), p. 393, 395-396 ; "Medical Assistant" American Medical Technologists, 2009, http://www.amt1.com/page.asp?i=159 (Accessed 10/5/09); "The Radiologist Assistant: Improving Patient Care While Providing Work Force Solutions" Advanced Practice Advisory Panel, March 9-10, 2002, p. 5; "Occupational Outlook Handbook: Medical Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-assistants.htm#tab-1 (Accessed 4/9/15), p. 5-6.

100 "Occupational Therapy Named One of Nation's 150 Best Recession-Proof Jobs" American Occupational Therapy Association, Press Release (October 21, 2008), p. 30.

Table 9-12: Other Licensed Paraprofessionals Distribution, Characteristics, and Demand

Services Provided	Licensure Status	Specialty	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Clinical	Licensed	Athletic trainer	18,200	23,700	30.00%	N/A	N/A	Growth in Athletic Trainer demand is anticipate to arise from a growing concern over permanent complications arising from concussions, as well as, growth in an active middle age and elderly population
Clinical	Highly educated, registered, or certified	Diagnostic medical sonographer	58,800	85,900	46.00%	Hospitals (64.9%), Physician Offices (11.7%), Outpatient Care Center (5.6%) Note: Includes all Diagnostic Related Technologists and Technicians.	Female (71.1%), White (non-Hispanic) (76.3%), Black/African American (7.8%) Note: Includes all Diagnostic Related Technologists and Technicians.	Due to expected rapid growth in technology and demand for radiation-free therapy for the aging population, demand will be high. Despite rapid growth in outpatient facilities, hospitals will remain the primary employer of sonographers.
Non-clinical	Unlicensed	Medical transcriptionist	84,100	90,500	8.00%	N/A	N/A	With a rising need for healthcare, especially considering the growing elderly population, more transcriptionists will be needed to keep up with documentation requirements. Although outsourcing transcription work is becoming more popular, domestic transcriptionists often are still required to edit international work. Additionally, even with speech recognition systems being more widely used, transcriptionists are needed to review, edit, and format the information.
Non-clinical	Unlicensed	Medical equipment preparer	51,600	62,000	20.00%	N/A	N/A	Growth in demand for Medical Equipment Preparers is anticipated as a result of the aging population.

Notes:
* n/a: Not available

Sources by Specialty:
1. "Occupational Outlook Handbook: Athletic trainers" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
2. "Occupational Outlook Handbook: Diagnostic medical sonographers" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
3. "AAMD 2006 Report on Salary and Workforce Survey" By Raymond Y. Chu, American Association of Medical Dosimetrists, June 2006, p. 14-15.
4. "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 31-9094 Medical transcriptionists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15).
5. "Occupational Outlook Handbook: 2014-2015 Data for Occupations Not Covered in Detail" Bureau of Labor Statistics, January 30, 2015, http://www.bls.gov/ooh/about/data-for-occupations-not-covered-in-detail.htm (Accessed 4/9/15).

OTHER LICENSED TECHNICIANS AND PARAPROFESSIONALS

Description and Scope

Three additional groups of healthcare professionals may be classified as licensed technicians and paraprofessionals, including: (1) *athletic trainers*; (2) *diagnostic medical sonographers*; and (3) *medical dosimetrists*.

These professions differ greatly in their description and scope of practice, with sonographers and dosimetrists providing clinical services that are heavily weighted in technical support and athletic trainers providing clinical services in diverse specialty areas. Common to of all these professionals, like other technicians and paraprofessionals, is the contingency of their services on the presence of an independent practitioner. Although they provide healthcare services that may affect patient care on some level, they are not primary care providers, and, therefore, they are not authorized to provide (and bill for) diagnostic services or therapeutic services. Table 9-13 on the following pages contains detailed descriptions of each of these professions.

Table 9-13: Other Licensed Paraprofessional Specialties and Educational and Training Requirements

Services Provided	Licensure Status	Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements	Number of Accredited Programs**	Accreditation and Certification Organizations*
Clinical	Licensed	Athletic Trainer	N/A	N/A	Involved in the education, prevention, treatment, and rehabilitation of musculoskeletal injuries, under the supervision of a physician.	Bachelor's degree from an accredited educational program, plus state licensure or registration, plus certification (*minimum*), plus advanced degree	368	CAATE (accreditation) BOC (certification)
Clinical	Highly educated, registered, or certified	Diagnostic Medical Sonographer	N/A	Obstetrics and gynecology, neurosonology, breast, abdomen, and fetal echocardiography	Operates equipment utilizing sound waves as a means of performing a diagnostic imaging procedure.	Varies (no preferred educational attainment level); typically a two- or four-year accredited program, plus professional registration is the most attractive to employers	210	CAAHEP (accreditation) JRCDMS (accreditation) ARDMS (registration)
Non-clinical	Unlicensed	Medical Transcriptionist	N/A	May work for a medical specialty, but there are no subspecialties within the transcriptionist profession.	Non-clinical worker who transcribes and accurately documents physician recordings into medical documents to add to patient records.	One-year certificate or two-year associate degree program (preferred) OR formal accredited program, plus registration or certification, plus continuing education	N/A	ACCP (accreditation) AHDI (certification or registration)
Non-clinical	Unlicensed	Medical Equipment Preparer	Central Sterile Processing Technician, Sterline Processing and Distribution Technician, or other title variations	N/A	Non-clinical worker who is responsible for medical laboratory or other healthcare equipment.	High school diploma, plus informal training (minimum; varies by employer and position), plus formal training course or related allied health program, plus certification	N/A	NCCA (certification)

(continued)

Notes:

* n/a: Not Applicable or Not Available; CAATE: Commission on Accreditation of Athletic Training Education; BOC: Board of Certification; CAAHEP: The Commission on Accreditation of Allied Health Education Programs; JRC-DMS: Joint Review Committee on Education in Diagnostic Medical Sonography; ARDMS: American Registry for Diagnostic Medical Sonography; JRCERT: Joint Review Committee on Education in Radiologic Technology; MDCB: Medical Dosimetrist Certification Board; ACCP: Approval Committee for Certificate Programs; AHDI: Association for Healthcare Documentation Integrity; NCCA: National Commission for Certifying Agencies

** Estimate as of 2009.

Sources by Specialty:

1. "Occupational Outlook Handbook: Athletic Trainers" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Accredited Programs" CAATE, 2009, p. 1.
2. "RDMS—Registered Diagnostic Medical Sonographer" ARDMS, 2009, http://www.ardms.org/default.asp?ContentID=63 (Accessed 11/23/09); "Diagnostic Medical Sonographers" Bureau of Labor Statistics, Occupational Outlook Handbook, 2014-15 edition, p. 1-2; "Accredited Program Search: Diagnostic Medical Sonographer" CAAHEP, 2009, http://www.caahep.org/Find-An-Accredited-Program/ (Accessed 11/23/09).
3. "Statement on the Scope and Standards of Medical Dosimetry Practice" AAMD, March 13, 2001, p. 7-8, 13; "Accredited Programs: [Medical Dosimetry]" JCERT, 2009, http://www.jrcert.org/cert/results.jsp#, (Accessed 11/23/09); "Exam Info/Eligibility" MDCB, 2009, http://www.mdcb.org/examinfo/eligibility.htm (Accessed 11/23/09).
4. "Occupational Outlook Handbook: Handbook Medical Transcriptionists" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
5. "Summary Report for 31-9093.00-Medical Equipment Preparers" O*NET OnLine, 2008, http://online.onetcenter.org/link/summary/31-9093.00 (Accessed 11/24/09), p. 1, 3; "Occupational Employment and Wages, May 2008: 31-9093 Medical Equipment Preparers" Bureau of Labor Statistics, May 2008, http://www.bls.gov/oes/current/oes319093.htm (Accessed 11/24/09), p. 1; "SPD Technician Certification Exam: C.S.P.D.T" By National Commission for Certifying Agencies, 2009, http://www.sterlineprocessing.org/technician.htm (Accessed 11/24/09), p. 1-2.

Scope

The scope of practice for each group of practitioners varies by profession and, in certain fields, by subspecialty. However, athletic trainers, diagnostic medical sonographers, and medical dosimetrists are all responsible for patient education; operation of equipment or medical devices relevant to their work; some level of critical thinking, analysis, and synthesis of medical information; and various administrative tasks (e.g., maintaining patient records), as required.[101]

Education and Training

The educational requirements for these non-physician professions vary from general educational or training requirements to formal degree, licensure, and certification requirements. For example, athletic trainers are required by state law to receive bachelor's degree training through an accredited program before sitting for the national certification exam and fulfilling state licensure requirements; accredited programs in diagnostic medical sonography may be either a bachelor or associates program.[102] A brief synopsis of educational and training requirements for each position may be found in Table 9-13.

SONOGRAPHERS AND DOSIMETRISTS

Industry Trends

Characteristics and Distribution

Sonographers and dosimetrists are predominantly based in hospitals and medical centers, respectively, with smaller subsets working in offices of various health practitioners or in

101 "Statement on the Scope and Standards of Medical Dosimetry Practice" American Association of Medical Dosimetrists, March 13, 2001, http://www.mdcb.org/pdfs/SCOPE_OF_PRACTICE.pdf (Accessed 6/2/10), p. 10.

102 "Occupational Outlook Handbook: Diagnostic Medical Sonographers and Cardiovascular Technologists and Technicians, Including Vascular Technologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/diagnostic-medical-sonographers.htm (Accessed 4/9/15), p. 5.

outpatient care settings.[103] Athletic trainers are found in a number of settings, practicing predominantly in educational institutions (25%) and offices of other health practitioners (15%).[104] See Table 9-12 for more specific statistics and information related to the distribution of these professions across various practice sites of service.

Supply and Demand

Substantial workforce growth is anticipated among licensed technicians and paraprofessionals.[105] Although hospitals will remain the primary employer of these practitioners in many cases, the number of employment opportunities in hospitals is expected to grow at a slower rate than in various outpatient settings (e.g., offices of health practitioners, outpatient facilities, and home healthcare organizations) in the coming years.[106] Also, most of these professions partially attribute the expected growth in demand for their services to the growing population of elderly, technological advances in their field, or both, which is similar to many other paraprofessionals.[107]

UNLICENSED TECHNICIANS AND PARAPROFESSIONALS

Unlicensed technicians and paraprofessionals provide services that do not require the same level of education, training, and regulation as their licensed counterparts. As such, these unlicensed physician extenders, with little to no practice autonomy, strictly provide manpower relief to supervising, licensed providers. In light of current and projected shortages, unlicensed technicians and paraprofessionals will continue to be utilized to alleviate the manpower deficit by acting as extensions of their supervising providers who maintain direct control of the services they perform.

NON-CLINICAL (UNLICENSED) TECHNICIANS

Description and Scope

Non-clinical technicians work within a specialized field to provide support to clinical service providers (e.g., patient documentation, medical equipment, and filling prescriptions).[108]

103 "American Association of Medical Dosimetrists 2006 Report on Salary and Workforce Survey" By Raymond Y. Chu, American Association of Medical Dosimetrists, June 2006, p. 14.

104 "Occupational Outlook Handbook: Athletic Trainers and Exercise Physiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/athletic-trainers-and-exercise-physiologists.htm (Accessed 4/9/15), p. 3.

105 See Table 9-12 for growth anticipated for each occupation.

106 "National Employment Matrix, Employment by Industry, Occupation, and Percent Distribution, 2006 and Projected 2016: 29-2033 Nuclear medicine technologists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2034 Radiologic technologists and technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 29-2031 Cardiovascular technologists and technicians" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15).

107 "Occupational Outlook Handbook: Athletic Trainers and Exercise Physiologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/athletic-trainers-and-exercise-physiologists.htm (Accessed 4/9/15), p. 5-7.

108 "Occupational Outlook Handbook: Medical Transcriptionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-transcriptionists.htm (Accessed 4/9/15), p. 1; "Occupational Outlook Handbook: Medical Records and Health

However, as previously stated, they may provide any level of patient care or support without the direction or supervision of an independent care practitioner and, as such, they are not subject to licensure requirements or other stringent regulatory guidelines related to their training, autonomy, or scope of practice.

Scope

Unlike their clinical counterparts, non-clinical technicians perform a limited scope of duties based on their capabilities, as determined by supervising independent practitioners.

Education and Training

Educational requirements vary widely by specialty, but the majority of non-clinical technician specialties require only that technicians complete on-the-job training (see Table 9-8). Though non-clinical technicians (for example, occupational health and safety technicians) are held to minimal educational standards, employers are beginning to prefer more formally trained applicants.[109] However, accredited education and training programs are available for all non-clinical technician specialties (see Table 9-8 for the number of accredited training programs available per specialty).

Industry Trends

Characteristics and Distribution

Two of the three non-clinical technician specialties listed in Tables 9-8 and 9-9 are predominantly based in the hospital setting. However, the various roles filled by non-clinical technicians afford them the option to practice in more specialized sites of services (e.g., orthotics and prosthetics), if they so choose. Additionally, the number of non-clinical technicians varies greatly by specialty, from 12,600 occupational health and safety technicians[110] to approximately 186,300 medical records and health information technicians reported in 2012.[111] For more information on the demographics of each non-clinical technician workforce population, see Tables 9-11 and 9-12.

Supply and Demand

Many of these professions are expected to experience a growth in demand for services from 2012 to 2022, due to one or both of the following: (1) advances in technology, which may allow for better detection, treatment, or both, may result in an increased case load and (2) an increased demand for services from the growing elderly population, which suffers a disproportionate share

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Information Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm (Accessed 4/9/15), p. 1.

109 "Occupational Outlook Handbook: Occupational Health and Safety Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/occupational-health-and-safety-technicians.htm (Accessed 4/9/15), p. 4-5.

110 Ibid\ p. 6.

111 "Occupational Outlook Handbook: Medical Records and Health Information Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm (Accessed 4/9/15), p. 1.

of various medical conditions and consequently comprises a large portion of the demand for medical services provided by these professionals.[112]

NON-CLINICAL (UNLICENSED) ASSISTANTS

Description and Scope

Non-clinical assistants (e.g., social and human service assistants) work under the direct control and supervision of autonomous healthcare professionals (i.e., physicians and authorized non-physician practitioners) to provide administrative services, support services, or both (see Table 9-10 for specific information related to the scope and educational requirements for social and human service assistants and clinical assistants).[113]

Scope

Non-clinical assistants provide more social and emotional support because their primary function is to improve patient quality of life.[114] The scope of services provided by social and human service assistants can vary, because they may practice in a number of subspecialties, fields, and collaborative, multispecialty settings. However, supervision requirements for these providers will remain fairly inflexible.[115]

Education and Training

The educational and training requirements for non-clinical assistants are both minimal and inconsistent from state to state (see Table 9-10 for educational requirements for social and human service assistants). Complementary and accredited certification programs do not exist for social and human service assistants.[116]

Industry Trends

Characteristics and Distribution

Non-clinical assistants practice in a variety of settings, including general and specialty or surgical hospitals, substance abuse and mental health centers, social assistance programs, and

112 "Occupational Outlook Handbook: Medical Transcriptionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-transcriptionists.htm (Accessed 4/9/15), p. 5-6; "Occupational Outlook Handbook: Medical Records and Health Information Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm (Accessed 4/9/15), p. 5-6.

113 "Statement on the Anesthesia Care Team, approved by the ASA House of Delegates on October 18, 2006, and last amended on October 22, 2008" American Society of Anesthesiologists, http://www.anesthesiacareteam.com/ (Accessed 6/2/10), p. 1; "Occupational Outlook Handbook: Social and Human Service Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/community-and-social-service/social-and-human-service-assistants.htm (Accessed 4/9/15), p. 1-3.

114 "Occupational Outlook Handbook: Social and Human Service Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/community-and-social-service/social-and-human-service-assistants.htm (Accessed 4/9/15), p. 1-3.

115 Ibid, p. 3-5.

116 "CAAHEP Accredited Program Search" Commission on Accreditation of Allied Health Education Programs, http://www.caahep. org/Find-An-Accredited-Program/ (Accessed 10/5/09); "Directory of Institutions and Programs" (Search for Social and Human Service Assistant Programs), Accrediting Bureau of Health Education Schools, 2015, http://ams.abhes.org/ams/onlineDirectory/pages/directory.aspx (Accessed 4/13/15).

state and local government programs (see Table 9-11 for the statistical distribution of social and human service assistants).[117]

Supply and Demand

In the coming years, the non-clinical assistant workforce will experience an increase in demand.[118] For many of these positions, growth in patient demand for services is due to one or more of the following: (1) growth in the aging *baby boomer* population and corresponding increase in age-related diseases and disabilities; (2) ongoing healthcare workforce shortages; (3) pressure to reduce healthcare spending by allowing assistants to provide more routine care and allowing independent healthcare practitioners to concentrate on more complex cases; and (4) advances in technology that have increased the standards for life expectancy, morbidity, and mortality, thereby increasing the need for support services.[119] For statistics regarding the increase in demand for non-clinical assistants, see Table 9-11.

AIDES

Description and Scope

Aides are entry-level healthcare professionals who possess few prerequisite qualifications.[120] Aides can perform an assortment of clerical, personal care, or medical duties in a variety of healthcare settings (e.g., homes, hospitals, and residential care facilities) to elderly, disabled, or otherwise handicapped patients.[121] In many cases, aide positions are designed primarily to assist the supervising healthcare provider(s) to ensure more effective and efficient delivery of services.[122] See Table 9-14 for a detailed description of each paraprofessional aide specialty.

117 "Occupational Outlook Handbook: Social and Human Service Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/community-and-social-service/social-and-human-service-assistants.htm (Accessed 4/9/15), p. 4.

118 Ibid, p. 6-7.

119 "A Study of Anesthesiology Assistants, Research Report No. 337" Legislative Research Commission, February 2007, http://www.anesthetist.org/other/AA_Study_-_RR337.pdf (Accessed 6/2/10), p. 12; "ACR and ASRT Development of the Radiologist Assistant: Concept, Roles, and Responsibilities" By Charles D. Williams and Brad Short, Journal of the American College of Radiology, Vol. 1, No. 6 (June 2004), p. 393, 395-396; "Medical Assistant" American Medical Technologists, 2009, http://www.amt1.com/page.asp?i=159 (Accessed 10/5/09); "The Radiologist Assistant: Improving Patient Care While Providing Work Force Solutions" Advanced Practice Advisory Panel, March 9-10, 2002, p. 5; "Occupational Outlook Handbook: Social and Human Service Assistants" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/community-and-social-service/social-and-human-service-assistants.htm (Accessed 4/9/15), p. 6-7.

120 "Defining the Frontline Workforce" Health Workforce Solutions and The Robert Wood Johnson Foundation, September 2005, http://www.rwjf.org/files/publications/DefiningFrontlineWorkforce.pdf (Accessed 6/3/10), p. 52; "Occupational Outlook Handbook: Nursing Assistants and Orderlies" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/nursing-assistants.htm (Accessed 4/9/15), p. 1-3; "Occupational Outlook Handbook: Personal Care Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/personal-care-aides.htm (Accessed 4/9/15), p. 1-3.

121 "Occupational Outlook Handbook: Nursing Assistants and Orderlies" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/nursing-assistants.htm (Accessed 4/9/15), p. 3; "Occupational Outlook Handbook: Personal Care Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/personal-care-aides.htm (Accessed 4/9/15), p. 3.

122 "Defining the Frontline Workforce" Health Workforce Solutions and The Robert Wood Johnson Foundation, September 2005, http://www.rwjf.org/files/publications/DefiningFrontlineWorkforce.pdf (Accessed 6/3/10), p. 52, 54; "Occupational Outlook Handbook: Nursing Assistants and Orderlies" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/nursing-assistants.htm (Accessed 4/9/15), p. 1-3; "Occupational Outlook Handbook: Personal Care Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/personal-care-aides.htm (Accessed 4/9/15), p. 1-3.

Table 9-14: Paraprofessional Aide Specialties and Educational and Training Requirements

Specialties	Alternate Job Titles	Subspecialties	Description	Educational and Training Requirements
Home Health Aide	N/A	N/A	A subset of long-term care workers that typically works in patient homes or a residential care facility, providing care for individuals with a variety of disabilities, including physical or mental handicaps, injuries, or illnesses.	On-the-job training, plus competency evaluation (minimum), plus state licensure
Nursing Aides, Orderlies and Attendants	Nurse aides, nursing assistants, certified nursing assistants, geriatric aides, or unlicensed assistive personnel	N/A	Provide personal and medically related assistance to elderly, disabled, or otherwise ill persons; typically work in nursing care facilities, hospitals, or mental health service settings.	High school diploma, previous work experience, or both (minimum), plus training, plus competency evaluation, plus certification
Personal Care Aide	Home care aides	N/A	Exclusively provide personal care services for a population consisting of the elderly, physically or mentally disabled persons, or otherwise incapacitated individuals who desire to live at home or in a residential care facility, but other informal workers or family members are unable to provide an adequate level of care to allow the individual to do so.	On-the-job training (minimum), plus voluntary national certification or other formal training
Psychiatric Aide	Mental health assistants or psychiatric nursing assistants	N/A	Responsible for the care and well-being of mentally impaired or emotionally disturbed patients.	High school diploma or the equivalent, plus on-the-job training (minimum, dependent on state), plus formal education
Physical Therapist Aide	Physical therapy assistants	N/A	May provide a variety of services to assist physical therapists and physical therapist assistants for the primary purpose of increasing the efficiency of a physical therapy session.	On-the-job training (minimum), plus high school diploma or the equivalent (dependent upon employer), plus community college training program
Pharmacy Aide	Dispensary or pharmacy attendants, pharmacy clerks, or drug clerks	N/A	Entry-level pharmacy position, primarily required to contribute to the efficient operation of a pharmacy and mostly restricted to clerical tasks.	On-the-job training (minimum), plus high school diploma or the equivalent and/or previous experience (dependent upon employer)

Notes:

* No central or national certification program exists for nursing aides, though several exist across the United States.

Sources by Specialty:

1. "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Nursing Aides, Home Health Aides, and Related Health Care Occupations: National and Local Workforce Shortages and Associated Data Needs", Health Resources and Services Administration, February 2004, p. vi, 43, 79.
2. "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides", Bureau of Labor Statistics Occupational Outlook Handbook, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
3. "Occupational Outlook Handbook: Personal and Home Care Aides" Bureau of Labor Statistics Occupational Outlook Handbook, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Standard Occupational Classification: 39-9021 Personal and Home Care Aides" Bureau of Labor Statistics, October 16, 2001, http://www.bls.gov/soc/soc_o9c1.htm (Accessed 10/6/09) p. 1; "Home Care Aide National Certification Program" National Association for Home Care and Hospice, http://www.nahc.org/education/PDFs/HCAcert.pdf (Accessed 10/6/09), p. 1.
4. "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Standard Occupational Classification: 31-1013 Psychiatric Aides" Bureau of Labor Statistics, October 16, 2001, http://www.bls.gov/soc/soc_k1b3.htm (Accessed 10/6/09) p. 1.
5. "Occupational Outlook Handbook: Physical Therapist Assistants and Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Defining the Frontline Workforce" Health Workforce Solutions, September 2005, p. 27, 52, 54.
6. "Defining the Frontline Workforce" Health Workforce Solutions, September 2005, p. 52; "Occupational Outlook Handbook: Pharmacy Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).

Scope

The duties performed by aides vary by specialty profession. For example, home health aides and personal care aides both provide long-term direct care in homes or residential care facilities; however, home health aides provide both medical and personal care services, but personal care aides provide personal care exclusively.[123] Nursing aides, orderlies, and attendants perform medical and personal care duties as well, but they practice primarily in hospitals or nursing care facilities.[124]

All aides must either work under the direct supervision of a qualified healthcare provider or follow a detailed plan prepared by nursing or medical staff.[125] Aides may be tasked certain medical care duties, such as checking vital signs, helping patients perform exercises, and providing general personal care, including mobility assistance, bathing, dressing, and grooming.[126] Aides also perform administrative and clerical tasks, such as updating patient records and documenting progress.[127]

Education and Training

Aides are expected to meet very few educational requirements, with the majority of the requirements being comprised of on-the-job training. Nursing aides, orderlies, and attendants, as well as psychiatric aides, generally are required to have a high school diploma or an equivalent.[128] In addition to informal training, home health aides must undergo a federal competency evaluation, and some states may require licensure or certification.[129] Optional training and certification programs also may be available for some professions (e.g., nursing aides and home care aides), although they are not required for authorized practice.[130] Accordingly, aide positions often are considered to be a stepping stone to more advanced

123 "Occupational Outlook Handbook: Personal Care Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/personal-care-aides.htm (Accessed 4/9/15), p. 1-2; "Occupational Outlook Handbook: Home Health Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/home-health-aides.htm (Accessed 4/9/15), p. 1-2.

124 "Occupational Outlook Handbook: Nursing Assistants and Orderlies" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/nursing-assistants.htm (Accessed 4/9/15), p. 1-2.

125 "Nursing Aides, Home Health Aides, and Related Health Care Occupations: National and Local Workforce Shortages and Associated Data Needs" Health Resources & Services Administration of the Department of Health and Human Services, February 2004, ftp://ftp.hrsa.gov/bhpr/nationalcenter/RNandHomeAides.pdf (Accessed 6/3/10), p. 43, 79; "Occupational Outlook Handbook: Nursing Assistants and Orderlies" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/nursing-assistants.htm (Accessed 4/9/15), p. 1-3.

126 "Nursing Aides, Home Health Aides, and Related Health Care Occupations: National and Local Workforce Shortages and Associated Data Needs" Health Resources & Services Administration of the Department of Health and Human Services, February 2004, ftp://ftp.hrsa.gov/bhpr/nationalcenter/RNandHomeAides.pdf (Accessed 6/3/10), p. 43, 79-80; "Occupational Outlook Handbook: Nursing Assistants and Orderlies" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/nursing-assistants.htm (Accessed 4/9/15), p. 1-3.

127 "Occupational Outlook Handbook: Physical Therapists Assistants and Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/physical-therapist-assistants-and-aides.htm (Accessed 4/9/15), p. 2-3.

128 "Defining the Frontline Workforce" Health Workforce Solutions and The Robert Wood Johnson Foundation, September 2005, http://www.rwjf.org/files/publications/DefiningFrontlineWorkforce.pdf (Accessed 6/3/10), p. 27, 52, 54; "Occupational Outlook Handbook: Home Health Aides Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/home-health-aides.htm (Accessed 4/9/15), p. 4.

129 Occupational Outlook Handbook: Home Health Aides Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/home-health-aides.htm (Accessed 4/9/15), p. 4.

130 "Home Care Aide National Certification Program" National Association for Home Care and Hospice, 2009, http://www.nahc.org/education/PDFs/HCAcert.pdf (Accessed 10/6/09), p. 1; "Occupational Outlook Handbook: Home Health Aides Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/home-health-aides.htm (Accessed 4/9/15), p. 4.

healthcare occupations, but aides typically will require additional education, training, or both to advance to these positions.[131]

Industry Trends

Characteristics and Distribution

The direct care workforce (i.e., home health aides, personal care aides, personal care assistants, and certified nursing assistants) work in diverse healthcare settings including hospitals, nursing care facilities and home healthcare services.

Occupational injury is common among certain paraprofessional aides. The incidence rate of injuries and illnesses that resulted in lost days of work for nursing aides, orderlies, and attendants was 414.1 per 10,000 workers in 2011, most of whom were women.[132] See Table 9-15 for more information related to aide workforce characteristics.

131 "Statement of John W. Rowe Before the Special Committee on Aging of the U.S. Senate" Statement of John W. Rowe, M.D.: Department of Health Policy and Management, Before the Special Committee on Aging, April 16, 2008, http://www.iom.edu/~/media/Files/Report%20Files/2008/Retooling-for-an-Aging-America-Building-the-Health-Care-Workforce/Statement%20of%20John%20W%20Rowe%20MD%20Before%20the%20Special%20Committee%20on%20Aging%20US%20Senate%20April%2016%202008.ashx (Accessed 6/3/10), p. 7.

132 "Nonfatal Occupational Injuries and Illnesses Requiring Days Away from Work, 2013 BLS News Release" Bureau of Labor Statistics, December 16, 2014, p. 2.

Table 9-15: Paraprofessional Aide Distribution, Characteristics, and Demand

Specialties	Workforce in 2012	Workforce in 2022	Percent Change 2012–2022	Primary Types of Work Settings	Additional Characteristics	Notes on Demand
Home Health Aide	875,100	1,299,300	48.00%	Nursing Care Facilities (32.8%), Hospitals (21.6%), Home Health Care Services (19.4%), Residential Care Facilities, Without Nursing (3.6%) Note: Includes Nursing, Psychiatric, and Home Health Aides.	Female (87.9%), White (non-Hispanic) (47.0%), Black/African American (33.1%) Note: Includes Nursing, Psychiatric, and Home Health Aides.	Expected demand from increasing needs of aging baby boomer population, high job turnover rates, increasing consumer preference for home care and advancing technologies that make home care more feasible.
Nursing Aides, Orderlies and Attendants	1,534,400	1,855,600	21.00%	N/A	N/A	Expected increase in demand due to growth in long-term needs of the elderly segment of the population and the rapid hospital discharge rates, which push patients into nursing home environments to recover, as well as higher turnover rates and incidence of nonfatal injury.
Personal Care Aide	1,190,600	1,771,400	49.00%	Services for the elderly and persons with disabilities (30%), Home Health Care Services (25.0%), Residential Care Facilities (13.0%), Private Households (9.0%)	N/A	Due to the onset of old age for the baby boomer population, advances in technology and medical care resulting in elongated life spans for older Americans, who often require a disproportionate amount of healthcare, and preference for personal home care for older adults (due to comfort and cost).
Psychiatric Aide	82,000	86,800	6.00%	Hospitals (42.0%), State Government (26.0%), Residential Care Facilities (21.0%), Individual, Family, Community and Vocational Rehabilitation Service (4.0%), Offices of Health Practitioners (2.0%)	N/A	The aging population will likely lead to increased incidence of age related mental and cognitive disease increasing demand for psychiatric technician services.
Physical Therapist Aide	50,000	70,100	40.00%	Offices of Physician, Occupational and Speech Therapists, and Audiologists (52.0%), Hospitals (24%), Nursing and Residential Care Facilities (8.0%), Government (3.0%)	N/A	Expected increase in demand due to the increasing elderly population, but positions will continue to be competitive due to the minimal qualifications required by most employers.

Sources by Specialty:

1. "Caring for America's Aging Population: A Profile of the Direct-Care Workforce" By Kristin Smith and Reagan Baughman, Monthly Labor Review, September 2007, p. 20-22; "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides" 2014-15 Edition, Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
2. "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides", 2014-15 Edition, Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/ home.htm (Accessed 4/9/15); "Nursing Aides, Home Health Aides, and Related Health Care Occupations: National and Local Workforce Shortages and Associated Data Needs" Health Resources and Services Administration, February 2004, p. iv.
3. "Occupational Projections for Direct-Care Workers 2006-2016" Paraprofessional Healthcare Institute, April 2008, p. 2; "Occupational Outlook Handbook: Personal and Home Care Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Statement of John W. Rowe Before the Special Committee on Aging of the U.S. Senate" Statement of John W. Rowe, M.D.: Department of Health Policy and Management, Before the Special Committee on Aging, April 16, 2008, http://www.iom.edu/~/media/Files/Report%20Files/2008/Retooling-for-an-Aging-America-Building-the-Health-Care-Workforce/Statement%20of%20John%20W%20Rowe%20MD%20Before%20the%20Special%20Committee%20on%20Aging%20US%20Senate%20April%2016%202008.ashx (Accessed 6/3/10), p. 3.
4. "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/ home.htm (Accessed 4/9/15).
5. "Occupational Outlook Handbook: Physical Therapist Assistants and Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).
6. "Defining the Frontline Workforce" Health Workforce Solutions, September 2005, p. 53; "Occupational Outlook Handbook: Pharmacy Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).

Supply and Demand

Most aide professions may face increased demand in the coming years, with personal and home care aides being among the top ten fastest growing occupations from 2012 to 2022.[133] Projected increases in demand for aides may be attributed, in part, to the growth in demand for long-term care services, specifically among the elderly population, and the accelerated rates of hospital discharge, which may push recovering patients into personal and nursing home environments.[134] Additionally, increased demand may be driven by consumer preference for home health options instead of hospitals and nursing facilities, which may prove to be more costly.[135] As the scope of services available in the home continues to expand, primarily due to advances in technology, affinity for home care will continue to grow.[136] The high turnover rate attributed to paraprofessional aides also contributes to projected growth in demand estimated for certain specialties.[137]

Unlike many other support professional workforces, both psychiatric and pharmacy technician populations are anticipated to decline from 2012 to 2022.[138] The psychiatric aid workforce,

133 "Occupational Outlook Handbook: Personal Care Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/personal-care-aides.htm (Accessed 4/9/15), p. 5-6; "Occupational Outlook Handbook: Home Health Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/home-health-aides.htm (Accessed 4/9/15), p. 5-6.

134 "Caring for America's Aging Population: A Profile of the Direct-Care Workforce" By Kristin Smith and Reagan Baughman, Monthly Labor Review, September 2007, p. 20; "Nursing Aides, Home Health Aides, and Related Health Care Occupations: National and Local Workforce Shortages and Associated Data Needs" Health Resources & Services Administration of the Department of Health and Human Services, February 2004, ftp://ftp.hrsa.gov/bhpr/nationalcenter/RNandHomeAides.pdf (Accessed 6/3/10), p. iv; "Occupational Outlook Handbook: Personal Care Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/personal-care-aides.htm (Accessed 4/9/15), p. 5-6; "Occupational Outlook Handbook: Home Health Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/home-health-aides.htm (Accessed 4/9/15), p. 5-6.

135 "Occupational Outlook Handbook: Home Health Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/home-health-aides.htm (Accessed 4/9/15), p. 5-6.

136 Ibid.

137 "Nursing Aides, Home Health Aides, and Related Health Care Occupations: National and Local Workforce Shortages and Associated Data Needs" Health Resources & Services Administration of the Department of Health and Human Services, February 2004, ftp://ftp.hrsa.gov/bhpr/nationalcenter/RNandHomeAides.pdf (Accessed 6/3/10), p. iv; "Occupational Outlook Handbook: Personal Care Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/personal-care-aides.htm (Accessed 4/9/15), p. 5-6; "Occupational Outlook Handbook: Home Health Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/ healthcare/home-health-aides.htm (Accessed 4/9/15), p. 5-6.

138 "Occupational Outlook Handbook: Psychiatric Technicians and Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/psychiatric-technicians-and-aides.htm (Accessed 4/9/15), p. 6-7; "Occupational Outlook Handbook: Pharmacy Technicians" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm (Accessed 4/9/15), p. 6-7.

predominantly employed in the hospital settings, is projected to increase due to the shift toward patient care in residential facilities.[139] Additionally, residential care facilities projections suggest that, from 2006 to 2022, residential care facility demand for psychiatric aides will increase by 31.2% (an additional 2,680 practitioners).[140] See Table 9-15 for more detail regarding characteristics and demand of paraprofessional aide positions.

OTHER UNLICENSED TECHNICIANS AND PARAPROFESSIONALS

Description and Scope

Two additional groups of healthcare professionals may also be classified as unlicensed technicians and paraprofessionals: (1) medical transcriptionists and (2) medical equipment preparers. These practitioners provide exclusively non-clinical services. Table 9-16 provides information on description, specialty areas, and educational requirements for medical transcriptionists and medical equipment preparers.[141]

Table 9-16: Paraprofessional Aide Distribution, Characteristics, and Demand

Specialty	Workforce in 2012	Workforce in 2022	% Change 2012-2022	Notes on Demand
Medical Transcriptionists	84,100	90,500	8.00%	With a rising need for healthcare, especially considering the growing elderly population, more transcriptionists will be needed to keep up with documentation requirements. Although outsourcing transcription work is becoming more popular, domestic transcriptionists often are still required to edit international work. Additionally, even with speech recognition systems being more widely used, transcriptionists are needed to review, edit, and format the information.
Medical Equipment Preparers	51,600	62,000	20.00%	Growth in demand for Medical Equipment Preparers is anticipated as a result of the aging population.

Notes:

* Characteristics for Home Health Aides are based on a study of all female direct care workers. "Caring for America's Aging Population: A Profile of the Direct-Care Workforce" By Kristin Smith and Reagan Baughman, Monthly Labor Review, September 2007.

Sources by Specialty:

1 "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 31-1011 Home Health Aides" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15), p. 1; "Caring for America's Aging Population: A Profile of the Direct-Care Workforce" By Kristin Smith and Reagan Baughman, Monthly Labor Review, September 2007, p. 20-22; "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).

2 "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 31-1012 Nursing aides, orderlies, and attendants" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15), p. 1; "Nonfatal Occupational Injuries and Illnesses Requiring Days Away from Work, 2006" Bureau of Labor Statistics, November 8, 2007, p. 5; "Occupational Outlook Handbook: Nursing, Psychiatric, and Home Health Aides", Bureau of Labor Statistics, Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Nursing Aides, Home Health Aides, and Related Health Care Occupations: National and Local Workforce Shortages and Associated Data Needs" Health Resources and Services Administration, February 2004, p. iv.

3 "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 39-9021 Personal and Home Care Aides" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Occupational Projections for Direct-Care Workers 2006-2016" Paraprofessional Healthcare Institute, April 2008, p. 2; "Occupational Outlook Handbook: Personal and Home Care Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15); "Statement of John W. Rowe Before the Special Committee on Aging of the U.S. Senate" Statement of John W. Rowe, M.D.: Department of Health Policy and Management, Before the Special Committee on Aging, April 16, 2008, http://www.iom.edu/~/media/Files/Report%20Files/2008/Retooling-for-an-

139 "Occupational Outlook Handbook: Psychiatric Technicians and Aides" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/psychiatric-technicians-and-aides.htm (Accessed 4/9/15), p. 6-7.

140 Ibid.

141 "Occupational Outlook Handbook: Medical Transcriptionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-transcriptionists.htm (Accessed 4/9/15), p. 1-2; "Occupational Employment Statistics: Medical Equipment Preparers" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes319093.htm (Accessed 4/9/15), p. 1.

Aging-America-Building-the-Health-Care-Workforce/Statement%20of%20John%20W%20Rowe%20MD%20Before%20the%20Special%20Committee%20on%20Aging%20US%20Senate%20April%2016%202008.ashx (Accessed 6/3/10), p. 3.

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6 "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 31-9095 Pharmacy Aides" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Defining the Frontline Workforce" Health Workforce Solutions, September 2005, p. 53; "Occupational Outlook Handbook: Pharmacy Aides" Bureau of Labor Statistics, 2014-15 Edition, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/home.htm (Accessed 4/9/15).

Scope

As previously mentioned, the scope of practice for each of these professions varies by profession and subspecialty, if applicable. Medical transcriptionists are accountable for various types of health information or medical documentation (e.g., patient records, physician reports, forms). Medical equipment preparers are knowledgeable about medical equipment, including its preparation, operation, and maintenance.[142]

Education and Training

The educational requirements for these unlicensed professions vary; some medical transcriptionists graduate from accredited associate degree programs, but no accreditation entity exists for medical equipment preparer programs.[143] Details related to the various educational requirements and options that these practitioners have are listed in Table 9-10.

Industry Trends

Characteristics and Distribution

Many professionals in these workforce sectors practice in hospitals or medical centers, with smaller populations working in the offices of various health practitioners or in outpatient care settings.[144] Workforce characteristics specific to medical transcriptionists and medical equipment preparers may be found in Table 9-12.

142 "Occupational Outlook Handbook: Medical Transcriptionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-transcriptionists.htm (Accessed 4/9/15), p. 1-2; "Occupational Employment Statistics: Medical Equipment Preparers" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes319093.htm (Accessed 4/9/15), p. 1.

143 "Occupational Outlook Handbook: Medical Transcriptionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-transcriptionists.htm (Accessed 4/9/15), p. 4

144 "American Association of Medical Dosimetrists 2006 Report on Salary and Workforce Survey" By Raymond Y. Chu, American Association of Medical Dosimetrists, June 2006, p. 14; "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 31-9094 Medical transcriptionists" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15); "Employment by industry, occupation, and percent distribution, 2012 and projected 2022: 31-9093 Medical equipment preparers" Bureau of Labor Statistics, National Employment Matrix, December 19, 2013, retrieved from http://www.bls.gov/emp/ep_table_108.htm (Accessed 4/13/15).

Supply and Demand

Growth in the number of both medical transcriptionists and medical equipment preparers is anticipated from 2012 to 2022.[145] These professions partially attribute the expected growth in demand to the aging demographic and to technological advances.[146] (More information demand trends can be found in Table 9-9).

CONCLUSION

In the era of healthcare reform, the role and utilization of technicians and paraprofessionals is changing. The healthcare industry is facing a drastic increase in demand for services as the baby boomer population reaches retirement age.[147] Additionally, with trends suggesting increased rates of chronic diseases that disproportionately strike the elderly, home health services, many of which are provided by technicians and paraprofessionals, will likely come into greater demand.[148] An increase in healthcare demand, met by workforce (primarily, physician) shortages, may result in increased utility of technicians and paraprofessionals as physician extenders in an effort to heighten the productivity of physician and non-physician practitioners while filling any "gaps" in service.

Despite the expected increase in industry demand, the technician and paraprofessional workforce is faced with the challenges of inconsistent regulation of education, licensure, certification, scope of practice, and supervision requirements. This inconsistency, observed from state to state, creates barriers to the successful integration of technicians and paraprofessionals into the broader healthcare delivery system. With demand for technicians and paraprofessionals, as well as other non-physician practitioners, on the rise, increased regulatory scrutiny may be anticipated. Paraprofessionals and technicians, like many other healthcare professionals, must be prepared for the impact that healthcare reform initiatives and shifting demographic trends may have on their roles in the delivery of healthcare services.

145 "Occupational Outlook Handbook: Medical Transcriptionists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/medical-transcriptionists.htm (Accessed 4/9/15), p. 5-6.
146 Ibid.
147 "12 Baby Boomer Retirement Trends" U.S. News and World Report, http://money.usnews.com/money/blogs/on-retirement/2014/7/22/12-baby-boomer-retirement-trends, (accessed 4/9/15).
148 "Health and Health Care 2010: The Forecast, The Challenge" The Institute for the Future and The Robert Wood Johnson Foundation, Second Edition, San Francisco, CA: Jossey-Bass, 2003, p. 21-22.

Table 9-17: Highlights in the Four Pillars

Technicians and Paraprofessionals	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Registered Nurses	Due to state sovereignty in determining the role and scope of RNs, direct federal regulation of these practitioners has been minimal. With increasing usage of telemedicine, the "portability" of a RN's nursing license across state lines has been a growing issue for many RNs.	(1) (2)	Generally, services performed by registered nurses are billed as "incident to" services provided by a physician. When under the direction of a physician, nursing services provided as part of "complex chronic care management services" are reimbursable under Medicare, utilizing CPT code 99487.	(3) (8)	Under current conditions, the U.S. has a shortage of RNs, which is expected to worsen by 2030. The number of employed RNs is expected to increase by 19% from 2012 to 2022.	(4) (5)	Increasing utilization of telemedicine technologies has broadened the reach of RNs beyond their physical place of work.	(2)
Licensed Practical Nurses	Licensed practical nurses must receive a license from their state of practice before providing care to patients. Many states restrict licensed practical nurses from performing patient assessments and care planning independent of an RN.	(6) (7)	Generally, services performed by licensed practical nurses are billed as "incident to" services provided by a physician.	(8)	A large number of licensed practical nurses are expected to retire over the next decade, likely creating job opportunities for new licensed practical nurses.	(9)	Increasing utilization of telemedicine technologies has broadened the reach of RNs beyond their physical place of work.	(10)
Radiation Therapist	In 42 states, radiation therapists must earn a state license in the field before entering practice.	(11)	Generally, radiation therapy services under Medicare Part B are billed as part of the technical component of physician services. Proposed changes to radiation therapy coding and the value of radiation therapy reimbursement in the 2015 Medicare Physician Fee Schedule Proposed Rule were delayed under 2016.	(12) (13)	With the increase in the age of baby boomers, coupled with the increased risk of cancer as people age, demand for radiation therapists is likely to increase.	(14)	In late 2014, the Cleveland Clinic noted that a new advancement in oncology radiation therapy - Intraoperative Radiation Therapy - supplemented a lumpectomy to reduce the presence of breast cancer without removing the entirety of the affected breast.	(15)

(continued)

Technicians and Paraprofessionals	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Respiratory Therapists	In all states except Alaska, respiratory therapists must earn a state license in the field before entering practice.	(16)	To receive Medicare reimbursement for respiratory therapy services in a comprehensive outpatient rehabilitation facility , physicians must supervise respiratory therapists as they provide care to a patient.	(26)	The number of employed respiratory therapists is expected to increase by 19% from 2012 to 2022; however, much of the demand will be concentrated in rural areas.	(17)	Oxygen therapy devices, which were typically bulky and limited mobility, are now becoming lighter and more portable.	(27)
Technologists	States vary as to whether technologists need a state license to perform their duties. However, most technologists are required to possess a bachelor's degree.	(18)	Medicare and private insurance reimbursement is dependent upon the services performed and where they are performed (the lab must meet certain requirements for services to be covered).	(29)	Demand for technologists is expected to increase by 14% from 2012 to 2022, in part due to the increased likelihood of physicians for baby boomers relying on laboratory testing to diagnose disease.	(19)	More automated equipment and stronger microscopes enable technologists to perform more specialized cellular tests.	(28)
Clinical Technician	States vary as to whether clinical technicians need a state license to perform their duties. However, most technicians are required to possess an associate's degree.	(18)	Medicare and private insurance reimbursement is dependent upon the services performed and where they are performed (the lab must meet certain requirements for services to be covered).	(29)	Demand for technicians is expected to increase by 30% from 2012 to 2022, in part due to the increased likelihood of physicians for baby boomers relying on laboratory testing to diagnose disease.	(19)	There is now automated equipment and computerized devices that can perform multiple tests at once, creating greater efficiency for technicians.	(28)
Clinical Assistants	Some states do not require clinical assistants to earn a state license to perform their duties. However, some states require clinical assistants to graduate from an accredited training program for medical assistants.	(20)	Clinical assistants will likely be able to use CPOE to enter medical records to count toward meaningful use under the Medicare and Medicaid EHR Incentive Programs, which will generate greater incentive payments.	(31)	Demand for medical assistants is expected to increase by 29% from 2012 to 2022, in part due to the increased demand for preventive medical services performed by physicians and supported by medical assistants.	(21)	Clinical assistants use a variety of technologies including spirometers and blood pressure units for patients' EMRs and medical software for recording EMRs.	(30)

Technicians and Paraprofessionals	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Other Unlicensed Technicians and Paraprofessionals	In most states, nursing assistants/orderlies do not need to earn a state licensure. However, most states require these professionals to complete an approved education program and pass a state-specific competency exam. Although states do not require medical transcriptionists to earn a license, most employers in the healthcare industry prefer to hire persons trained in medical transcription at a vocational school or community college.	(22) (24)	Providers who utilize the services of unlicensed technicians and paraprofessionals must be careful to abide by state and federal fraud and abuse laws because they may be at risk for healthcare fraud if they bill unlicensed technician services to Medicare or Medicaid.	(32)	Demand for nursing assistants is expected to increase by 21% from 2012 to 2022, in part due to the increased utilization of long-term care facilities by elderly patients. Demand for medical transcriptionists is expected to increase by 8% from 2012 to 2022. This rate is lower than other technicians and paraprofessionals due to innovations in speech recognition software.	(23) (25)	Improved speech-recognition software has allowed computers to perform many of the traditional duties of a medical transcriptionist.	(25)

Notes:

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2 "Nursing Licensure Portability: Options and Information for Registered Nurses" American Nursing Association, 2013, http://www.nursingworld.org/MainMenu Categories/Policy-Advocacy/Positions-and-Resolutions/Issue-Briefs/Nursing-Licensure-Portability.pdf (Accessed 4/10/15).

3 "Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule, Clinical Laboratory Fee Schedule, Access to Identifiable Data for the Center for Medicare and Medicaid Innovation Models & Other Revisions to Part B for CY 2015; Final Rule" Federal Register Vol. 79, No. 219, (November 13, 2014) p. 67662.

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8 "Incident To/Shared Visits: Taking Credit for Someone Else's Follow-Up" Centers for Medicare & Medicaid Services, 2015, http://apps.ngsmedicare.com/ADC/displaymedia.aspx?whatToDo=attch&id=1706 (Accessed 4/10/15) p. 11.

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14 "Occupational Outlook Handbook: Job Outlook - Radiation Therapists" Bureau of Labor Statistics, U.S. Department of Labor, January 8, 2014, http://www.bls.gov/ooh/healthcare/radiation-therapists.htm#tab-6 (Accessed 4/10/15).

15 "Top 10 Innovations for 2015 - #9: Intraoperative Radiation Therapy for Breast Cancer" Cleveland Clinic, 2014, http://summit.clevelandclinic.org/Top-10-Innovations/Top-10-for-2015-%285757%29/Top-10-Articles/9-Intraoperative-Radiation-Therapy-for-Breast-Canc.aspx (Accessed 4/10/15).

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32 "False and Fraudulent Claims" Department of Health and Human Services, Office of Inspector General, https://oig.hhs.gov/fraud/enforcement/cmp/false_claims.asp (Accessed 4/13/15).

Key Sources

Key Source	Description	Citation	Website
The Centers for Medicare and Medicaid Services (CMS)	CMS administers the Medicare, Medicaid, and CHIP programs. CMS is responsible for setting reimbursement rates under Medicare and Medicaid. The CMS website contains important information for beneficiaries of these programs, as well as for guidelines for providers.	"Centers for Medicare and Medicaid Services" Centers for Medicare and Medicaid Services, U.S. Department of Health and Human Services, http://www.cms.gov/ (Accessed 4/10/15).	www.cms.hhs.gov
Occupational Outlook Handbook	Biennial publication by the Bureau of Labor Statistics, is a "recognized source of career information" providing detailed information on several professions in many industries, including education and training, job prospects, earnings, and so forth.	"Occupational Outlook Handbook" Bureau of Labor Statistics, 2014-15 Edition, www.bls.gov/OCO/ (Accessed 4/10/15).	www.bls.gov/OCO
National Employment Matrix	Publication by the Bureau of Labor Statistics providing statistical information on supply and demand for many professions by occupation or industry type.	"2012-16 National Employment Matrix, detailed industry by occupation" Bureau of Labor Statistics, December 14, 2007, www.bls.gov/emp/empiols.htm (Accessed 4/10/15).	www.bls.gov/emp/empiols.htm
Health Care Careers Directory	Publication by the American Medical Association providing a detailed description and educational directory for dozens of healthcare careers.	"Health Care Careers Directory 2012-2013" American Medical Association, Chicago, IL, 40th Edition, 2012.	n/a

Associations

Type of Association	Name	Description	Citation	Contact Information
National	American Physical Therapy Association (APTA)	APTA is a professional association representing more than 90,000 member physical therapists, physical therapist assistants, and students of physical therapy nationwide.	"About Us" American Physical Therapy Association, http://www.apta.org/AboutUs/ (Accessed 4/10/15).	**American Physical Therapy Association** 1111 North Fairfax Street Alexandria, VA 22314-1488 Phone: 800-999-APTA (2782) Fax: 703-684-7343 www.apta.org
National	American Dental Assistants Association (ADAA)	ADAA is the largest and oldest national association for dental assisting professionals in the United States, providing more than eighty eight years of service.	"History of ADAA" American Dental Assistants Association, http://www.adaausa.org/About-ADAA/History-of-ADAA (Accessed 4/10/15).	**American Dental Assistants Association** 140 N. Bloomingdale Road Blooming Dale, IL 60108-1017 Phone: 630-994-4247 Toll free: 877-874-3785 Fax: 630-351-8490 www.adaausa.org

(continued)

Type of Association	Name	Description	Citation	Contact Information
National	American Dental Association (ADA)	"Founded in 1859, the not-for-profit American Dental Association is the nation's largest dental association, representing more than 157,000 dentist members. Since then, the ADA has grown to become the leading source of oral health related information for dentists and their patients. The ADA is committed to its members and to the improvement of oral health for the public."	"About the ADA" American Dental Association, http://www.ada.org/en/about-the-ada/ (Accessed 4/10/15).	**American Dental Association** 211 East Chicago Ave. Chicago, IL 60611-2678 Phone: 312-440-2500 www.ada.org/en/
National	National Dental Assistants Association (NDAA)	An auxiliary arm of the National Dental Association (NDA), the NDAA specifically serves dental assistants.	"National Dental Assistants Association Assoc." National Dental Association, http://ndaonline.org/national-dental-assistant-assoc/ (Accessed 4/10/15).	**National Dental Association** 6411 Ivy Lane Suite 703 Greenbelt, MD 20770 Phone: 202-588-1697 Fax: 202-588-1244 www.ndaonline.org/national-dental-assistant-assoc/
National	American Association of Medical Assistants (AAMA)	Founded in 1955, AAMA is the only worldwide association representing the medical assistant profession.	"History" American Association of Medical Assistants, http://www.aama-ntl.org/about/history (Accessed 4/10/15).	**American Association of Medical Assistants** 20 N. Wacker Dr. Ste. 1575 Chicago, IL 60606 Phone: 312-899-1500 Fax: 312-899-1259 www.aama-ntl.org
National	National Association for Home Care and Hospice (NAHC)	NAHC is a nonprofit association in the United States that represents the interests of home care agencies, hospices, home care aide organizations, and medical equipment suppliers.	"About NAHC" National Association for Home Care and Hospice, http://www.nahc.org/about/ (Accessed 4/10/15).	**National Association for Home Care & Hospice** 228 Seventh Street, SE Washington, DC 20003 Phone: 202-547-7424 Fax: 202-547-3540 www.nahc.org
National	American Society of Radiologic Technologists (ASRT)	Founded in 1920, ASRT is the world's oldest and largest association for radiation therapists and medical imaging technologists.	"History of the American Society of Radiologic Technologists" American Society of Radiologic Technologists, http://www.asrt.org/main/about-asrt/asrt-history (Accessed 4/10/15).	**American Society of Radiologic Technologists** 15000 Central Ave. SE Albuquerque, NM 87123-3909 Phone: 800-444-2778 or 505-298-4500 Fax: 505-298-5063 E-mail: memberservices@asrt.org www.asrt.org

Type of Association	Name	Description	Citation	Contact Information
National	American Association for Respiratory Care (AARC)	AARC is the leading professional society for respiratory care committed to advancing the science and practice of respiratory care nationally and internationally.	"A Quick Look at AARC" American Association for Respiratory Care, https://www.aarc.org/aarc/us/ (Accessed 4/10/15).	**American Association for Respiratory Care** 9425 N. MacArthur Blvd. Suite 100 Irving, TX 75063-4706 Phone: 972-243-2272 E-mail: info@aarc.org www.aarc.org
National	Association of Surgical Technologists (AST)	Established in 1969, AST is the oldest and most well-known professional organization in the United States that promotes superior knowledge, skills and quality care by surgical technologists.	"About AST" Association of Surgical Technologists, http://www.ast.org/AboutUs/About_AST/ (Accessed 4/10/15).	**Association of Surgical Technologists** 6 West Dry Creek Circle Suite 200 Littleton, CO 80120 Phone: 800-637-7433 Fax: 303-694-9169 www.ast.org
National	American Society for Clinical Laboratory Science (ASCLS)	As the preeminent organization for practitioners of clinical laboratory science since it was organized in 1933, ASCLS promotes a standard of excellence for providing the best quality of accessible and cost-effective clinical laboratory education, practice, and management.	"ASCLS History" The American Society for Clinical Laboratory Science, http://www.ascls.org/about-us/ascls-history (Accessed 4/10/15).	**The American Society for Clinical Laboratory Science** 1861 International Drive Suite 200 McLean, VA 22101 Phone: 571-748-3770 Email: ascls@ascls.org www.ascls.org
National	American Medical Technologists (AMT)	Established in 1939, AMT is a nonprofit agency providing certification and membership programs for various allied health professionals.	"American Medical Technologists - Who We Are" American Medical Technologists, http://www.americanmedtech.org/AboutUs.aspx (Accessed 4/10/15).	**American Medical Technologists** 10700 West Higgins Road Suite 150 Rosemont, IL 60018 Phone: 847-823-5169 Fax: 847-823-0458 www.americanmedtech.org
National	American Society of Echocardiography (ASE)	ASE, founded in 1975, is a professional association committed to excellence in cardiovascular ultrasound, providing education, advocacy, and research to improve patient care.	"About ASE" American Society of Echocardiography, http://asecho.org/about-ase/ (Accessed 4/10/15).	**American Society of Echocardiography** 2100 Gateway Centre Boulevard, Ste. 310 Morrisville, NC 27560 Phone: 919-861-5574 asecho.org

(continued)

Type of Association	Name	Description	Citation	Contact Information
National	Academy of Nutrition and Dietetics	"The Academy of Nutrition and Dietetics is the world's largest organization of food and nutrition professionals founded in Cleveland, Ohio, in 1917… the Academy has over 75,000 members — registered dietitian nutritionists, dietetic technicians, registered, and other dietetics professionals holding undergraduate and advanced degrees in nutrition and dietetics, and students — and is committed to improving the nation's health and advancing the profession of dietetics through research, education and advocacy."	"About US" Academy of Nutrition and Dietetics, http://www.eatrightpro.org/resources/about-us (Accessed 4/10/15).	**Academy of Nutrition and Dietetics** 120 South Riverside Plaza Suite 2000 Chicago, IL 60606-6995 Phone: 800-877-1600 or 312-899-0040 www.eatright.org
National	American Health Information Management Association (AHIMA)	Established in 1928, AHIMA seeks to improve healthcare by promoting best practices in health information management.	"Who We Are" American Health Information Management Association, http://www.ahima.org/about/aboutahima?tabid=story (Accessed 4/10/15).	**American Health Information Management Association** 233 N. Michigan Avenue, 21st Floor Chicago, IL 60601-5809 Phone: 312-233-1100 Fax: 312-233-1090 www.ahima.org
National	American Association of Bioanalysts (AAB)	Established in 1956, AAB is a national professional association representing the interests of clinical laboratory professionals nationwide.	"About AAB" American Association of Bioanalysts, www.aab.org/aab/About_AAB.asp (Accessed 4/10/15).	**American Association of Bioanalysts** 906 Olive Street Suite 1200 Saint Louis, MO 63101 Phone: 314-241-1445 Fax: 314-241-1449 www.aab.org/aab/default.asp
National	American Association of Psychiatric Technicians (AAPT)	AAPT is the nonprofit organization responsible for national certification of psychiatric technicians and related healthcare positions in the United States.	"Home" American Association of Psychiatric Technicians, www.psychtechs.org/ (Accessed 4/10/15).	**The American Association of Psychiatric Technicians** 1220 S Street Suite 100 Sacramento, CA 95811-7138 Phone: 800-391-7589 Fax: 916-329-9145 E-mail: loger@psychtechs.net www.psychtechs.org

Type of Association	Name	Description	Citation	Contact Information
National	American Nurses Association (ANA)	ANA is "the only full-service professional organization representing the interests of the nation's 3.1 million registered nurses" through advocacy efforts.	"About ANA" American Nurses Association, 2015, www.nursingworld.org/FunctionalMenuCategories/AboutANA (Accessed 4/10/15).	**American Nurses Association** 8515 Georgia Avenue Suite 400 Silver Spring, MD 20910-3492 Phone: 301-628-5000 or 1-800-274-4ANA (4262) Fax: 301-628-5001 www.nursingworld.org
National	American Association of Medical Dosimetrists (AAMD)	AAMD is "an international society established to promote and support the Medical Dosimetry profession."	"AAMD Mission Statement" American Association of Medical Dosimetrists, http://www.medicaldosimetry.org/generalinformation/mission.cfm (Accessed 4/10/15).	**American Association of Medical Dosimetrists** 2201 Cooperative Way Suite 600 Herndon, VA 20171 Phone: 703-677-8071 Fax: 703-677-8071 E-Mail: aamd@medicaldosimetry.org www.medicaldosimetry.org

Chapter 10

Allied Health Professionals

The natural force within each of us is that greatest healer of all.

Hippocrates

KEY TERMS

Carve-Out
Chiropractic
Chiropractic Diplomate
Clinical Psychology
Computer-Aided Design and Computer-Aided Manufacturing (CAD/CAM)
Dental Amalgam
Dental Health Maintenance Organization (DHMO)
Dental Hygienist
Direct Reimbursement
Doctor of Dental Surgery (D.D.S.) or Doctor of Dental Medicine (D.M.D.)
Extracorporeal Shockwave Therapy (EST)
Eye Refractions
Glaucoma
Heidelberg Retinal Tomograph (HRT) Device
Ophthalmologists
Optical Coherence Tomography
Optometrist
Orthotics
Osseointegration
Pachymeter
Piezoelectric Sensor
Podiatric Assistants
Podiatry
Preferred Provider Organization (PPO)
Presbyopes
Psychology
Psychotechnology
Scanning Laser Ophthalmoscope
Spinal Manipulation
Surface Electromyography (SEMG)
The American Board of Professional Psychology
Therapeutic Pharmaceutical Agent (TPA)
Tigecycline

Key Concept	Definition	Citation	Concept Mentioned on Page #
Chiropractic and Alternative Medicine	Chiropractic care is often deemed complementary or alternative therapy. The profession "is also in some sense a 'parallel' profession to medicine," particularly in cases when patients seek chiropractic care as primary care and respond favorably to treatments rendered. In addition, the profession has fought to distinguish itself from its alternative title through the use of evidence-based science.	"Chiropractic Care of the Orthopedic Patient" By Stephen Bolles, Techniques in Orthopaedics, Vol. 18, No. 1 (2003), p. 87.	615
Wilk v. American Medical Association	The court in Wilk held that the American Medical Association (AMA) violated antitrust law by conducting an illegal boycott of chiropractors, granting an injunction against the AMA.	"Wilk v. American Medical Association," 895 F.2d 352, 378 (7th Cir. 1990).	615
Expansion of the Chiropractic Practice	The expansion of chiropractic practice to include provision of nutrition services, as well as vitamin and food supplements, has been utilized as a means to strengthen patient bones, joints, and immune systems.	"Build a Nutrition Ancillary in 4 Basic Steps" By Rich Smith, ChiroEco, May 2009, www.chiroeco.com/chiropractic/news/7896/1168/Build-a-nutrition-ancillary-in-4-basic-steps/ (Accessed 11/4/09); "Give Your Practice a Boost," Chiropractic Products, Oct. 2007, p. 34.	616
Licensure	"Licensure is a regulatory function designed to protect the public in the competent provision of health care."	"President's Message" National Board of Examiners in Optometry, 2008, www.optometry.org/president.cfm (Accessed 9/11/09).	607
Licensure Mobility	Doctors of Optometry (O.D.s) who have graduated from an accredited O.D. program, have been in practice for three of the past four years, remain in good standing with their state boards, and have completed fifty hours of continuing education approved by the Council on Optometric Practitioner Education are eligible for practice in another state.	"O.D. Licensure Mobility Moves Closer to Reality" Review of Optometry, April 15, 2005, p. 10.	641
Joint Board Certification Project Team (JBCPT)	JBCPT was formed in 2007 in an effort to form policies and procedures to implement board certification for optometrists. The JBCPT has since established the American Board of Optometry and a board certification process.	"American Optometric Association Approves Optometric Board Certification At Annual Meeting," American Optometric Association, June 27, 2009, www.aoa.org/x12978.xml (Accessed 10/23/09).	612
The Corporate-Owned (or Corporate-Affiliated) Practice of Optometry	Optometrists in private practice have lost some of their market share to chain stores that offer full service eye care at mass-purchasing prices. However, despite the decreased cost of care and easier access, surveys have shown that people feel they get a "better" examination from a private O.D. than from an O.D. practicing in a corporate-affiliated environment.	"What Do Consumers Think of Corporate O.D.s?" Corporate Optometry Reports, 4th Quarter 2008, www.corporateod.com/docs/pubArchive/COR4Q08.pdf (Accessed 8/17/09), p. 4; "Lending to Doctors of Optometry" By Christine Childress and Dev Strischeck, Journal of Commercial Lending, Feb. 1992, p. 38.	613–614

Key Concept	Definition	Citation	Concept Mentioned on Page #
Doctor of Podiatric Medicine	To become a podiatric physician, an individual must complete at least three years (ninety credit hours) at an accredited college institution as well as complete four to six years of study at a podiatric medical school and received a passing score on the national and state licensing exams (National Board examinations).	"Occupational Employment Handbook, 2014-15 Edition: Podiatrists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/podiatrists.htm (Accessed 4/6/15).	626
Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008	The act's purpose is to end health insurance benefits inequity between medical or surgical benefits and mental health or substance abuse for group health plans of fifty or more employees. The law became effective on January 1, 2010, which means approximately 113 million people have the right to nondiscriminatory mental health coverage.	"Summary of the Wellstone-Domenici Mental Health Parity and Addiction Equity Act of 2008" American Psychological Association Practice Organization, www.apapractice.org/apo/in_the_news.html# (Accessed 6/29/09).	623

OVERVIEW

As discussed in the *Introduction* to this book, the non-physician healthcare workforce has evolved drastically, leading to ambiguity in the classification of various practitioners and professions. As a result of these inconsistencies, industry stakeholders continue to define the allied health profession differently. The taxonomy established herein defines "allied health professionals" as providers who practice *parallel* to physicians. That is, allied health practitioners often strive to meet demands that align (and sometimes compete) with those met by physicians, but they typically provide a scope of services that is distinctly different from the physician scope of practice.

DESCRIPTION AND SCOPE

SCOPE

Allied health professionals are state licensed and credentialed healthcare providers who receive formal academic and clinical training. Allied health practitioners often work with physicians and other healthcare professionals to provide high quality patient care.

EDUCATION AND TRAINING

All allied health professionals are required to complete some level of undergraduate study prior to pursuing four to seven years of advanced training through an accredited allied health program. All allied health providers hold doctoral degrees specific to their practice. Degree designations and educational requirement are summarized in Table 10-1.

Table 10-1: Allied Health Professional Degrees and Education

Professional	Education	Degree Awarded
Dentists	• Minimum of two years of college-level pre-dental education prior to admittance • Four years of dental school*	Doctor of Dental Surgery (D.D.S.) or Doctor of Dental Medicine (D.M.D.)**
Optometrist	• At least three years of pre-optometric education • Four years of optometry school†	Doctor of Optometry (O.D.)†
Chiropractor	• At least ninety semester hours of undergraduate education • Four years of chiropractic education in an accredited program††	Doctor of Chiropractic (D.C.)††
Psychologist	• Completion of undergraduate degree • Completion of doctorate (five to seven years of study)‡	Psychologists may hold a doctoral degree (Ph.D.) or Doctorate of Psychology (Psy.D.)‡
Podiatrist	• At least three years (ninety credit hours) at an accredited college institution.‡‡ • Four to six years of study at a podiatric medical school§ • Passing score on the national and state licensing exams (National Board examinations)§§	Doctor of Podiatric Medicine (D.P.M.)µ

* *"How to Become a Dentist" Bureau of Labor Statistics, Occupational Outlook Handbook, January 8, 2014, http://www.bls.gov/ooh/healthcare/dentists.htm#tab-4 (Accessed 4/10/15).*

** *Dentistry Definitions" American Dental Association, http://www.ada.org/prof/ed/specialties/definitions.asp (Accessed 9/8/09).*

† *"Optometrists," Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2008-09 Edition, http://www.bls.gov/oco/pdf/ocos073.pdf (Accessed 8/13/09).*

†† *"The Chiropractic Profession" By David A. Chapman-Smith, NCMIC Group Inc., 2000, p. 1; "What is Chiropractic" American Chiropractic Association, http://www.acatoday.org/level2_css.cfm?T1ID=13&T2ID=61 (Accessed 6/22/09).*

‡ *"Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2008, http://www.bls.gov/oco/pdf/ocos073.pdf (Accessed 4/6/15).*

‡‡ *"Admission Requirements" By American Association of Colleges of Podiatric Medicine, 2009, http://www.aacpm.org/html/careerzone/require.asp (7/13/09).*

§ *"Podiatric Education" By American Association of Colleges of Podiatric Medicine, 2009, http://www.aacpm.org/html/careerzone/career_podeducation.asp (7/13/09).*

§§ *"The Examinations" By National Board of Podiatric Medical Examiners, National Board of Podiatric Medical Examiners, 2009, http://www.nbpme.info/Exams.htm (7/20/09).*

µ *"About Podiatry" By American Podiatric Medical Association, American Podiatric Medical Association, 2009, http://www.apma.org/MainMenu/AboutPodiatry.aspx (7/20/09).*

SPECIALTIES

For the purposes of this *Guide*, allied health practitioners include dentists, optometrists, chiropractors, psychologists, and podiatrists. While many allied health professionals are general practitioners, others choose to specialize (see Table 10-2).

Table 10-2: Professionals and Specialties

Professional	Specialties	
Dentists	1. Orthodontics and Dentofacial Orthopedics	6. Oral and Maxillofacial Pathology
	2. Pediatric Dentistry	7. Endodontics
	3. Periodontics	8. Oral and Maxillofacial Radiology
	4. Prosthodontics	9. Public Health Dentistry
	5. Oral and Maxillofacial Surgery	
Optometrist	1. Pediatric Eye Care	5. Neuro-Optometry
	2. Geriatric Eye Care	6. Sports Vision
	3. Specialty Contact Lenses	7. Vision Therapy
	4. Ocular Disease	
Chiropractor	1. Sports Physician	6. Clinical Nutrition
	2. Occupational Health	7. Chiropractic Physiological Therapeutics and Rehabilitation
	3. Orthopedics	8. Diagnostic Imaging (Radiology)
	4. Neurology	9. Acupuncture
	5. Diagnosis and Management of Internal Disorders	10. Pediatrics
Psychologist	1. Clinical Neuropsychology	8. Industrial-Organizational Psychology
	2. Clinical Health Psychology	9. Behavioral and Cognitive Psychology
	3. Psychoanalysis Psychology	10. Forensic Psychology
	4. School Psychology	11. Family Psychology
	5. Clinical Psychology	12. Professional Geropsychology
	6. Clinical Child Psychology	13. Police & Public Safety Psychology
	7. Counseling Psychology	14. Sleep Psychology
Podiatrist	1. Podiatric Orthopedics	4. Podiatric Sports Medicine
	2. Podiatric Surgery	5. Podopediatrics
	3. Podiatric Primary Care	6. Wound Care and Management

Notes:

1. "Specialty Definitions: Definitions of Recognized Dental Specialties" American Dental Association, http://www.ada.org/en/education-careers/careers-in-dentistry/dental-specialties/specialty-definitions (Accessed 4/14/15).
2. "Optometric Residencies Titles and Descriptions," Association of Schools & Colleges of Optometry, 2009, http://www.opted.org/about-optometric-education/residency-programs/optometric-residency-titles-descriptions/ (Accessed 4/14/15).
3. "Chiropractic Specialties on the Rise" By Gina Shaw, American Chiropractic Association, https://www.acatoday.org/content_css.cfm?CID=2323 (Accessed 4/14/15).
4. "Recognized Specialties and Proficiencies in Professional Psychology" American Psychological Association, 2015, http://www.apa.org/ed/graduate/specialize/recognized.aspx (Accessed 4/14/15).
5. "Specialty Areas in Podiatric Medicine" By Barry University School of Podiatric Medicine, Barry University, 2009, http://barry.edu/podiatry/SpecialtyAreas.htm (7/13/09).

Industry Trends and Highlights in the Four Pillars

All allied health professionals are regulated at both the state and federal levels. At the state level, every allied health practitioner is subject to state licensing board requirements. At the federal level, every professional is subject to federal legislation and regulation. Each receives unique reimbursement from both public payors (for example, Medicare and Medicaid) and private payors.

In particular, Medicaid is an optional state–federal partnership program in which all states currently participate.[1] If a state chooses to participate in Medicaid, it must follow federal guidelines and must provide certain "mandatory" minimum covered services.[2] Additionally, each state may provide additional "optional" benefits to beneficiaries, which may vary from state to state.[3] Unfortunately, when states have been cutting their budgets, allied health professions (with the exception of mental health services) have been losing their Medicaid funding.[4]

Additionally, allied health providers face competition both from within their professions and from physicians. However, situations do exist which allow allied health professionals to form collaborative relationships with other healthcare professionals to increase quality of care. Finally, technological advancements may increase allied health professionals efficiency in service delivery. For highlights in the Four Pillars for each type of Allied Health Practitioner, please see Table 10-7, at the end of this Chapter.

DENTISTRY

OVERVIEW

Humans have been looking for ways to identify and treat tooth pain since approximately 5000 BC and perhaps as far back as Neolithic times.[5] Dental practices were first integrated into the U.S. healthcare delivery system in the 1700s.[6] By the 1840s, U.S. practitioners had formed the first national dental organization (the American Society of Dental Surgeons), established the world's first dental school, and utilized drugs, including nitrous oxide and ether, during treatment.[7] As the number and complexity of skills necessary to provide dental services increased with demand and the emergence of new dental technologies, dental colleges became more prevalent, and states began imposing regulations on the industry.[8] Dental treatment and care has become a vital facet of healthcare, and it accounts for approximately four percent of U.S. healthcare spending.[9]

1 "Medicaid 'Mandatory' and 'Optional' Eligibility Benefits" Kaiser Commission on Medicaid and the Uninsured, July 2001, http://www.kff.org/medicaid/loader.cfm?url=/"Medicaid 'Mandatory' and 'Optional' Eligibility Benefits" Kaiser Commission on Medicaid and the Uninsured, July 2001, http://www.kff.org/medicaid/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=13767 (Accessed 5/21/09), p. 1.
2 Ibid.
3 Ibid.
4 "The Crunch Continues: Medicaid Spending, Coverage and Policy in the Midst of a Recession" Kaiser Commission on Medicaid and the Uninsured, September 2009, http://www.kff.org/medicaid/upload/7985.pdf (Accessed 10/20/09), p. 72-75.
5 "History of Dentistry" American Dental Association, http://www.ada.org/public/resources/history/timeline_ancient.asp (Accessed 3/17/10); "Early Neolithic Tradition of Dentistry" By A. Coppa, et al., Brief Communications, Vol. 440 (April 6, 2006), p. 755; "Dental Laboratory Industry Report: The Golden Quarter Century" By Peter Stein, National Association of Dental Laboratories, 2001, p. 6.
6 "Dental Laboratory Industry Report: The Golden Quarter Century" By Peter Stein, National Association of Dental Laboratories, 2001, p. 7.
7 Ibid.
8 Ibid, p. 5-8.
9 "Health Spending Explorer" Kaiser Family Foundation, http://www.healthsystemtracker.org/interactive/health-spending-explorer/?display=U.S.%2520%2524%2520Billions&service=Hospitals%252CPhysicians%2520%2526%2520Clinics%252CDental%252CPrescription%2520Drug&rangeType=range&years=2012%252C2013 (Accessed 4/6/15).

DESCRIPTION AND SCOPE

Scope

Dentists provide a broad range of services to patients. The most common procedures performed by general practitioners include prophylaxis (i.e., cleaning), periodic oral evaluation, and direct restoration.[10] Insurance policies commonly recognize the following seven areas of dental care: (1) preventative (general maintenance), (2) restorative (fillings and crowns), (3) endodontics (tooth pulp care), (4) oral surgery (extractions), (5) orthodontics (braces and retainers), (6) periodontics (treatment for gums), and (7) prosthodontics (tooth replacements such as bridges and dentures).[11] Insurance providers generally do not cover cosmetic procedures, which include teeth whitening and veneers.[12]

> *The most common procedures performed by general practitioners include prophylaxis (i.e., cleaning), periodic oral evaluation, and single restoration crowns.*
>
> ***American Dental Association, Aug. 2007.***

Education and Training

As of 2015, there were 65 accredited dental education programs in the U.S.[13] Programs must be accredited by the *Commission on Dental Accreditation* (CODA), which operates under the *American Dental Association* (ADA).[14] Dental program graduates earn either a *Doctorate of Dental Surgery* (DDS) or a *Doctorate of Dental Medicine* (DMD).[15] DDS and DMD degrees are functionally identical; the scope of practice for DDS and DMD practitioners is the same, and both programs use identical curriculum requirements set by CODA.[16]

Generally, dentists must complete four years of study, a national examination, and licensure.[17] However, dentists are required to complete additional training to restrict their scope of practice to a specialty area, and they must complete a separate competency exam administered by the national board for that specialty in order to become "board certified."[18] Because dentists do not sit for this certification examination, they are considered to be "board eligible" instead.

10 "2005-06 Survey of Dental Services Rendered" American Dental Association: Chicago, IL, p. 28.
11 "Interim Recommendations" National Association of Dental Plans, Letter to Citizens' Health Care Working Group (August 31, 2006).
12 "Expansion of Dental Benefits Under the Medicare Advantage Program" By Robert D. Compton, Journal of Dental Education, Vol. 69, No. 9 (September 2005), p. 1041.
13 "DDS/DMD Programs-U.S." American Dental Association, 2015, http://www.ada.org/en/coda/find-a-program/search-dental-programs/dds-dmd-programs (Accessed 4/6/15).
14 "Accreditation" American Dental Association, 2009, http://ada.org/prof/ed/accred/index.asp (Accessed 8/28/09).
15 "Dentistry Definitions" American Dental Association, 2009, http://www.ada.org/prof/ed/specialties/definitions.asp (Accessed 5/29/09).
16 "Dentistry Definitions" American Dental Association, 2009, http://www.ada.org/prof/ed/specialties/definitions.asp (Accessed 5/29/09).
17 Ibid.
18 "Dentistry Definitions" American Dental Association, 2009, http://www.ada.org/prof/ed/specialties/definitions.asp (Accessed 5/29/09); "State Dental Licensure Requirements for U.S. Dentists" American Dental Association, July 2009, http://www.ada.org/prof/prac/licensure/state_dent_licensure_requirement.pdf (Accessed 10/06/09); "Report of the ADA-Recognized Dental Specialty Certifying Boards" American Dental Association, April 2009, http://www.ada.org/prof/ed/specialties/specialty_certifying_report.pdf (Accessed 10/14/09), p. 7.

Specialties

A dental specialty is an area that has been recognized by the ADA as meeting the *Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists*.[19] Most dentists (81%) become general dental practitioners, but with further training, a graduate from an accredited dental program can become a specialist in one of the fields listed in Table 10-3.[20]

Table 10-3: Dental Specialties and Descriptions*

Specialty	Brief Description
Orthodontics and Dentofacial Orthopedics	Focuses on the correction of structural abnormalities of the teeth
Pediatric Dentistry	Specializes in the dental treatment of infants and children
Periodontics	Specializes in the treatment of gums and related structures
Prosthodontics	Specializes in replacing teeth and other missing oral structures
Oral and Maxillofacial Surgery	Specializes in oral surgery
Oral and Maxillofacial Pathology	Specializes in the nature of oral diseases
Endodontics	Specializes in root canals
Oral and Maxillofacial Radiology	Specializes in production and interpretation of images
Public Health Dentistry	Specializes in community dental efforts

* "Glossary of Dental Clinical and Administrative Terms" *American Dental Association, http://www.ada.org/prof/ed/specialties/definitions.asp (Accessed 4/9/15).*

Traditionally, orthodontics has been the most profitable dental specialty due to low expenditures and the high price of procedures.[21] In addition, advances in "invisible" orthodontics, such as Invisalign, have significantly boosted the amount of adult orthodontics performed.[22] However, patients tend to postpone elective procedures (such as cosmetic treatments and orthodontia) in times of economic depression, making revenues highly pro-cyclical as compared with other areas of the healthcare industry.[23]

INDUSTRY TRENDS

Characteristics and Distribution

The *Health Resources and Services Administration* (HRSA) recently estimated that, in 2012, there were 190,800 dentists active in the workforce.[24] U.S. Bureau of Labor Statistics (BLS) data indicates that approximately 90% of all active dental practitioners work in private practice.[25]

19 "Dental Specialties" American Dental Association, http://www.ada.org/104.aspx (Accessed 5/27/10).
20 "Glossary of Dental Clinical and Administrative Terms" American Dental Association, http://www.ada.org/en/publications/cdt/glossary-of-dental-clinical-and-administrative-ter (Accessed 4/10/15).
21 "How Much Is Your Practice Really Worth?" The Blair/McGill Advisory, Vol. 19, No. 3 (March 2004), p. 2; "2003 Annual Practice Profitability Survey" The Blair/McGill Advisory, Vol. 19, No. 5 (2004), p. 4-5.
22 "Current Trends in Dentistry" The McGill Advisory, Vol. 23, No. 1 (January 2008), p. 2.
23 "2008 Practice Results Better than Expected" The McGill Advisory, Vol. 24, No. 5 (May 2009), p. 6.
24 "National and State-Level Projections of Dentists and Dental Hygienists in the U.S., 2012-2025" Health Resources and Services Administration, February 2015, http://bhpr.hrsa.gov/healthworkforce/supplydemand/dentistry/nationalstatelevelprojectionsdentists.pdf (Accessed 4/6/15), p. 7.
25 "Occupational Employment and Wages, May 2014: 29-1021 Dentists, General" Bureau of Labor Statistics, 2014, http://www.bls.gov/oes/current/oes291021.htm (Accessed 4/6/15).

Demographically, although white males dominate the population of dentists, the workforce is becoming more diverse. Between 2000 and 2010, the share of women enrolled in pre-doctoral dental programs rose from 39% to 46%, and between 1985 and 2010, the share of non-white students rose from 19% to 35%.[26] As of March, 2015, approximately 71% of dentists in the U.S. were men.[27]

> *In 2014, approximately 90% of active dentists worked in private practice.*
>
> ***Bureau of Labor Statistics, 2014.***

Supply and Demand

Recently, the HRSA published a report that indicated that as of 2012, the demand for full-time dentists exceeded the supply of full time dentists by approximately 7,000, and that by 2025, the U.S. would face a shortage of approximately 15,600 full time dentists.[28] The BLS estimates that, between 2012 and 2025, the supply of dentists will grow by 16%, slightly faster than the average American occupation.[29] However, this growth rate is somewhat slower than the growth in supply of other health practitioners, which the BLS projects to grow by 20%.[30] This indicates that, as suggested by the HRSA report, the population of dentists may not be as well prepared to meet the needs of growing demand. Over the next few years, the aging of the baby-boomer generation, continued research linking oral health to overall health, and increased access to insurance coverage for dental services will increase demand for dentists, who may be forced to employ increasing numbers of dental hygienists in order to maintain a sufficient level of supply.

Notably, the current and projected future shortage of dentists is not uniformly distributed across the United States. As of April 2015, HRSA had assigned over 2,800 *Dental Health Professional Shortage Areas* (DHPSAs), which would need more than 550 additional dental health practitioners in order to meet the needs of almost 1.2 million people nationwide.[31] However, in its February 2015 report, HRSA noted that the states with the greatest shortfalls of dentists were New York, Illinois, Florida, and California.[32]

Nanotechnology

Utilizing the physical properties of materials and devices with structures of one hundred nanometers or less has allowed new innovations in the field of dental implants.[33] Despite

26 "Dental Education: Evolving Student Trends" By Marilyn W. Woolfolk, DDS, MPH, and Shelia S. Price, DDS, EdD, Journal of Dental Education, January 2012, http://www.ucdenver.edu/academics/colleges/dentalmedicine/AboutUs/diversity/Documents/UofMarticle.pdf (Accessed 4/6/15), p. 54.

27 "Professionally Active Dentists by Gender" Henry J. Kaiser Family Foundation, State Health Facts, 2015, http://kff.org/other/state-indicator/total-dentists-by-gender/ (Accessed 4/6/15).

28 "National and State-Level Projections of Dentists and Dental Hygienists in the U.S., 2012-2025" Health Resources and Services Administration, February 2015, http://bhpr.hrsa.gov/healthworkforce/supplydemand/dentistry/nationalstatelevelprojectionsdentists.pdf (Accessed 4/6/15), p. 7.

29 "Occupational Outlook Handbook, 2014-2015 Edition: Dentists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/dentists.htm#tab-1 (Accessed 4/6/15).

30 Ibid.

31 "Designated Health Professional Shortage Areas Statistics" Health Resources and Services Administration, April 3, 2015, p. 3.

32 "National and State-Level Projections of Dentists and Dental Hygienists in the U.S., 2012-2025" Health Resources and Services Administration, February 2015, http://bhpr.hrsa.gov/healthworkforce/supplydemand/dentistry/nationalstatelevelprojectionsdentists.pdf (Accessed 4/6/15), p. 8-10.

33 "Nanotechnology: The New Buzz Word in Dental Implants" Dental Compare, June 4, 2007, http://www.dentalcompare.com/news.asp?newsid=185425 (Accessed 5/29/09).

implants comprising a limited number of tooth replacements, this new technology is purported to cut healing times in half and improve *osseointegration*. Despite the premium costs associated with these implants, it remains unclear whether dentists are passing these costs on to their patients.[34]

CONCLUSION

As of 2012, the number of practicing dentists is expected to grow by 16% during the 10-year period, ending 2022.[35] Nonetheless, this growth is not expected to keep pace with demand for dental services during this projection period [36]

Before the economic downturn, many dentists were exploring practice expansion to include cosmetic dentistry, because aesthetic dentistry is often more profitable than other dental procedures.[37] However, in the current economic environment, patients are considering cosmetic treatment to be nonessential, and practices offering a high proportion of cosmetic services are faring worse than other segments of the dentistry field.[38]

It can be expected that as long as the economy continues to suffer, so too will many portions of dentistry, with orthodontics suffering the most.[39] General dentistry, however, is likely to recover quickly, because it has a broader base of patients than do many dentistry specialties.[40] Similarly, pediatric dentistry will continue to do well in the future due to low cost of procedures, high volume, and low competition from other specialties.[41] By contrast, oral surgery is likely to be affected the most from the transition to managed care and, if the trend continues, practitioners will be threatened with increasing production expectations for less compensation.[42]

As many recent oral surgery graduates have earned dual MD/DDS degrees, many are electing to pursue careers in medically related fields.[43] Competition within periodontics is steadily increasing as dentists retire at older ages, periodontal disease decreases with the decline in tobacco use, and general dental practices implement soft tissue management programs.[44] Despite this, periodontal specialists continue to benefit from the growing number of aging baby boomers.[45] Similarly, demand for endodontic services remains strong with a rapidly growing elderly population with a desire to retain their teeth.[46] Future problems for endodontic specialists include increased competition from a saturated marketplace as dentists begin to retire later and residency programs produce specialists at much higher rates than anticipated.[47]

34 Ibid.
35 "Dentists: Occupational Outlook Handbook" Bureau of Labor Statistics, U.S. Department of Labor, 2014-15 Edition, http://www.bls.gov/ooh/healthcare/dentists.htm#tab-5 (Accessed 4/6/15).
36 Ibid.
37 "Keys to Colossal Case Acceptance" By Patrick Wahl, Dental Economics, Vol. 94, No. 3 (2004), p. 48-49.
38 "2008 Practice Results Better than Expected" The McGill Advisory, Vol. 24, No. 5 (May 2009), p. 6.
39 Ibid, p. 6-7.
40 Ibid, p. 6-7.
41 Ibid, p. 7.
42 "2008 Practice Results Better than Expected" The McGill Advisory, Vol. 24, No. 5 (May 2009), p. 7.
43 Ibid.
44 Ibid, p. 8.
45 Ibid, p. 8.
46 Ibid, p. 8.
47 Ibid, p. 8.

OPTOMETRY

OVERVIEW

Americans have been developing and using eye care for hundreds of years. The *American Optometric Association* (AOA) was formed in 1900 and was known originally as the *American Optical Association*.[48] Prior to the formation of the AOA, no laws existed to regulate the prescription of eyewear.[49] Minnesota was the first state to license optometrists in 1901; by 1924, optometry was recognized in the remaining forty-nine states.[50] Until the mid-1970s, "optometrists primarily checked visual acuity and prescribed glasses and contact lenses, and they were unable to administer drugs of any kind."[51] However, since then, legislation has broadened the scope of practice to allow Doctors of Optometry to use *therapeutic pharmaceutical agents* (TPA) and, in most states, to treat sight-threatening eye diseases, such as *glaucoma*.[52]

> *Glaucoma is the second leading cause of blindness in the world, according to the World Health Organization."*[53]

DESCRIPTION AND SCOPE

Scope

Optometrists, or *Doctors of Optometry* (OD), are the primary providers of vision care and compose the nation's largest eye care profession, serving patients in nearly 6,500 communities across the country.[54] They provide primary eye care to two thirds of U.S. patients.[55]

> *Doctors of optometry provide two-thirds of all primary eye care in the United States.*
>
> ***American Optometric Association, 2015.***

> *A Doctor of Optometry is licensed to practice optometry, not to practice medicine.*
>
> ***Bureau of Labor Statistics, 2008.***

48 "The Development of a New Profession in America" By Ewing Adams, The Australasian Journal of Optometry, (October 31, 1942), p. 461.
49 Ibid.
50 "The Optometrist's Rise to Power in the Health Care Market, or 'It's Optometric Physician to You'" By Scott Warnock, Science Communication, Vol. 27, No. 1 (September 2005), p. 101.
51 Ibid.
52 Ibid, p. 100.
53 "Glaucoma Facts and Stats" Glaucoma Research Foundation, Jan. 2009, http://www.glaucoma.org/learn/glaucoma_facts.php (Accessed 9/11/09).
54 "Doctors of Optometry and Their Education" American Optometric Association, 2009, http://www.aoa.org/x5879.xml (Accessed 8/12/09); "Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, D.C.: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/optometrists.htm (Accessed 4/7/15).
55 "About the American Optometric Association (AOA)" American Optometric Association, 2014, http://www.aoa.org/?sso=y (Accessed 4/9/15).

To practice optometry, an optometrist must obtain a *Doctor of Optometry* (OD) degree and obtain a state license.[56] Optometrists are trained to examine, diagnose, treat, and manage diseases, injuries, and disorders of the visual system, the eye, and associated structures, as well as identify related systemic conditions affecting the eye, and may prescribe medications, low vision rehabilitation, vision therapy, glasses, contact lenses, and perform certain surgical procedures.[57] Optometrists examine patients' eyes to "determine [the] nature and degree of vision problem[s] or eye disease" and to "prescribe eyeglasses, corrective lenses and other vision aids or therapeutic procedures to correct or conserve vision."[58] Optometric practitioners perform a variety of tests to "determine visual acuity and perception and to diagnose diseases and other abnormalities, such as glaucoma and color blindness."[59] If additional medical treatment is deemed necessary, optometrists commonly consult with other healthcare professionals, including family practitioners, pediatricians, neurologists, and ophthalmologists.[60]

Education and Training

To become an OD, an individual must complete at least three years of undergraduate pre-optometric education and four years in an accredited optometry program.[61] In 2007, the AOA and five other optometric organizations formed the *Joint Board Certification Project Team* to explore the idea of implementing optometric board certification.[62] In June 2009, AOA members established the *American Board of Optometry* (ABO) to "develop and implement the framework for board certification and maintenance of certification."[63] The new organization will work to employ a board certification process in an effort to solidify optometry's value and competency within the medical community.[64] ABO requirements will include, among others, graduation from an *Accreditation Council on Optometric Education* accredited college of optometry; three years of active licensure[65] or accumulation of post-graduation points through participation in a residency, fellowship, or related program; and successful completion of a board certification examination.[66] The ABO will designate those who successfully complete these requirements with "Board Certified" status for ten years.[67]

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56 "Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2008, http://www.bls.gov/oco/pdf/ocos073.pdf (Accessed 4/6/15).

57 "Doctors of Optometry and Their Education" American Optometric Association, 2009, http://www.aoa.org/x5879.xml (Accessed 8/12/09); "Health Care Careers Directory 2009-2010" American Medical Association, http://www.ama-assn.org/ama1/pub/upload/mm/40/vrp03-optometry.pdf (Accessed 8/12/09).

58 "The Health Care Almanac: A Resource Guide to the Medical Field" By Lorri A. Zipperer, Chicago, IL: American Medical Association, 1995, p. 225.

59 Ibid.

60 "Facts About Optometry and Optometric Services in Hospitals" American Optometric Association, 1997, http://www.aoa.org/documents/FactsAboutOptometricServicesinHospitals.pdf (Accessed 8/12/09), p. 1.

61 "Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2008, http://www.bls.gov/oco/pdf/ocos073.pdf (Accessed 4/6/15).

62 "American Optometric Association Approves Optometric Board Certification At Annual Meeting" American Optometric Association, June 27, 2009, http://www.aoa.org/x12978.xml (Accessed 10/23/09).

63 Ibid.

64 "American Optometric Association Approves Optometric Board Certification At Annual Meeting" American Optometric Association, June 27, 2009, http://www.aoa.org/x12978.xml (Accessed 10/23/09).

65 "DRAFT MODEL—American Board of Optometry (ABO): Initial Board Certification Process" American Board of Optometry, June 2009, http://www.aoa.org/documents/ABOpercent20Requirementspercent20forpercent20Boardpercent20Certificationpercent20FINALpercent20DRAFTpercent20JUNEpercent202009.pdf (Accessed 10/23/09).

66 "How do I Earn Board Certification?" American Board of Optometry, 2012, http://americanboardofoptometry.org/board-certification/get-certified/ (Accessed 4/10/15).

67 "DRAFT MODEL—American Board of Optometry (ABO): Initial Board Certification Process" American Board of Optometry, June 2009, http://www.aoa.org/documents/ABOpercent20Requirementspercent20forpercent20Boardpercent20Certificationpercent20FINALpercent20DRAFTpercent20JUNEpercent202009.pdf (Accessed 10/23/09).

Specialties

The majority of optometrists are general practitioners.[68] However, some optometrists participate in residency programs following optometry school, which offer training in subspecialties such as family practice optometry, pediatric optometry, geriatric optometry, vision therapy and rehabilitation, low-vision rehabilitation, cornea and contact lenses, refractive and ocular surgery, primary eye care optometry, ocular disease, and community health optometry (see Table 10-4).[69] Specialty residency programs are generally one-year programs.[70]

Table 10-4: Optometry Specialties and Description*

Specialty	Description
Family Practice Optometry	Specialists treat a broad population of patients ranging from pediatric to geriatric.*
Pediatric Optometry	Specialists treat children's visual needs.**
Geriatric Optometry	Specialists treat the elderly population's visual needs.**
Vision Therapy and Rehabilitation	Specialists work to overcome vision deficiencies related to how patients use their eyes (e.g., aiming, focusing, fixating, and so forth), how patients process visual information (e.g., perception, retention, and so forth), or both.**
Low-Vision Rehabilitation	Specialists work with patients with low vision.†
Cornea and Contact Lenses	Specialists work to treat patients in areas related to corneas and contact lenses.†
Refractive and Ocular Surgery	Specialists focus on patients needing refractive and ocular surgery.†
Ocular Disease	Specialists work to treat and manage ocular diseases, and often collaborate with physicians for "systemic management of related diseases."††
Community Health	Specialists "emphasize public health and cultural issues that impact care."†

* *"Optometric Residencies Titles and Descriptions" Association of Schools & Colleges of Optometry, 2009, http://www.opted.org/files/public/Optometric_Residency_Titles_Descriptions_2009.pdf (Accessed 10/23/09).*

** *"Optometry: A Career Guide" Association of Schools and Colleges of Optometry, April 2008, http://www.opted.org/files/public/Optometry_Career_Guide_April2008.pdf (Accessed 8/14/09), p.8.*

† *"Optometric Residencies Titles and Descriptions," Association of Schools & Colleges of Optometry, 2009, http://www.opted.org/files/public/Optometric_Residency_Titles_Descriptions_2009.pdf (Accessed 10/23/09).*

†† *"Optometry: A Career Guide," Association of Schools and Colleges of Optometry, April 2008, http://www.opted.org/files/public/Optometry_Career_Guide_April2008.pdf (Accessed 8/14/09), p. 9.*

INDUSTRY TRENDS

Characteristics and Distribution

In 2011, optometrists in the workforce were predominantly males (61% of surveyed optometrists) working in either private practices (57% of surveyed optometrists) or corporate

68 "Health Care Careers Directory 2009-2010" American Medical Association, http://www.ama-assn.org/ama1/pub/upload/mm/40/vrp03-optometry.pdf (Accessed 8/12/09).

69 "Doctors of Optometry and Their Education" American Optometric Association, 2009, http://www.aoa.org/x5879.xml (Accessed 8/12/09); "Listing by Type of Residency" Optometric Residency Matching Services, Inc., 2009, http://www.optometryresident.org/Programpercent20Types.htm (Accessed 10/23/09); "Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2008, http://www.bls.gov/oco/pdf/ocos073.pdf (Accessed 4/6/15).

70 "Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2008, http://www.bls.gov/oco/pdf/ocos073.pdf (Accessed 4/6/15).

practices (24% of surveyed optometrists).[71] In recent years, the gender composition of the profession has shifted to become more balanced, with women representing approximately 64% of new optometry graduates in 2013,[72] compared to only 3% in 1973.[73] The optometrist workforce may be shifting in terms of age as well. Although the average optometrist was 46 years old in 2011, over a third of all practicing optometrists had been in practice fewer than 10 years.[74] Furthermore, the average age of optometrists who owned their practice was slightly higher, at 50 years.[75] As practicing optometrists reach retirement age, many are searching for younger optometrists to take over their practices.[76] Racially, the optometry profession is predominantly white, as 37% of optometric graduates are Asian American, African American, or Hispanic/Latino.[77]

Supply and Demand

In 2012, the BLS estimated a U.S. workforce of 33,100 full-time optometrists.[78] As the elderly population grows and the prevalence of certain chronic diseases (e.g., diabetes) rises, the demand on the optometric services also grows.[79] Age-related eye diseases, such as diabetes, cataracts, macular degeneration, and chronic dry eye disease often result in vision loss and blindness. These age-related eye diseases are the leading causes of vision impairment and blindness in the U.S., affecting more than 142 million people in the over 40 years old age group.[80] Analysts project that the aging population will cause age-related eye disease to double within the next three decades.[81] This proliferation of conditions that result in vision loss or blindness may greatly increase demand for optometric services over the next several years.

As these conditions become more prevalent, driving up demand for optometric services, the optometrist workforce is projected to respond with rapid growth, increasing 24% between 2012 and 2022.[82] In addition to meeting increased demand for optometric services, this strong growth in supply may allow the optometrist workforce to supplement the population of ophthalmologists, which may be facing a shortage as a result of the projected surge in demand.[83]

71 "Practicing Optometrists and their Patients: Executive Summary" American Optometric Association Research & Information Center, December 2012, https://www.aoa.org/Documents/optometrists/2012_Practicing_ODs-Executive_Summary.pdf (Accessed 4/7/15), p. 1.
72 "Applicant/Student Profile and Prerequisites" Association of Schools and Colleges of Optometry, http://www.opted.org/about-optometric-education/professional-o-d-programs/applicants-and-advisors/student-profile-prerequisites/ (Accessed 4/7/15).
73 "Caring for the Eyes of America: A Profile of the Optometric Profession" American Optometric Association, 2008, p. 8.
74 "Practicing Optometrists and their Patients: Executive Summary" American Optometric Association Research & Information Center, December 2012, https://www.aoa.org/Documents/optometrists/2012_Practicing_ODs-Executive_Summary.pdf (Accessed 4/7/15), p. 1.
75 Ibid.
76 "Optometry: A Career Guide" Association of Schools and Colleges of Optometry, March 2013, http://www.opted.org/wp-content/uploads/2013/3/EyesHaveIt_CareerGuide.pdf (Accessed 4/7/15), p. 3.
77 "Applicant/Student Profile and Prerequisites" Association of Schools and Colleges of Optometry, http://www.opted.org/about-optometric-education/professional-o-d-programs/applicants-and-advisors/student-profile-prerequisites/ (Accessed 4/7/15).
78 "Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/optometrists.htm (Accessed 4/7/15).
79 Ibid.
80 "Vision Problems in the U.S.: Prevalence of Adult Vision Impairment and Age-Related Eye Disease in America" By John A. Shoemaker, 2012 Update, Prevent Blindness America, 2012, http://www.visionproblemsus.org/index.html (Accessed 4/7/15).
81 Ibid.
82 "Occupational Outlook Handbook: 2014-15 Edition: Optometrists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2015, http://www.bls.gov/ooh/healthcare/optometrists.htm (Accessed 4/7/15).
83 "Can Ophthalmologists and Optometrists Work Together?" By Shelly Reese, Medscape, October 1, 2013, http://www.medscape.com/viewarticle/811867_2 (Accessed 4/7/15).

CHIROPRACTIC

OVERVIEW

Chiropractic is "a health profession concerned with the diagnosis, treatment, and prevention of disorders of the musculoskeletal system, and the effects of these disorders on the nervous system and general health."[84] Chiropractic was founded in 1895 by Daniel Palmer, a practitioner of magnetic healing and spinal manipulation.[85] Although he had no formal training, Palmer was well versed in anatomy and physiology.[86] In 1897, Palmer founded the Palmer School of Chiropractic in Davenport, Iowa, which has maintained a chiropractic program since its establishment.[87]

> *Chiropractic was founded in 1895, by Daniel Palmer, a practitioner of magnetic healing and spinal manipulation, when, in 1897 he founded the Palmer School of Chiropractic in Davenport, which is still around today.*
>
> ***Chapman-Smith, 2000.***

> *Chiropractic come from the Greek words praxis and cheir, meaning practice or treatment by hand.*[88]

For many years, it was not unusual for chiropractic to be labeled as an "unscientific cult" by organized medicine.[89] In 1963, the *American Medical Association* (AMA) formed the *Committee on Quackery*, which declared it unethical for medical physicians to professionally associate with unscientific practitioners like chiropractors.[90] The committee's primary mission was to contain and ultimately eliminate chiropractic practice.[91] The AMA's fierce opposition to chiropractic led to a highly publicized court battle in the 1990s, *Wilk v. American Medical Association*.[92] The court ultimately held that the AMA violated the Sherman Antitrust Act by conducting an illegal boycott of chiropractors, and it granted an injunction against the AMA.[93]

Although *Wilk* alleviated attacks on chiropractic from the AMA, the profession still struggled to gain respect and acceptance from healthcare practitioners and patients.[94] Polls show that

84 "The Chiropractic Profession: Its Education, Practice, Research and Future Directions" By David A. Chapman-Smith, West Des Moines, IA: NCMIC Group Inc., 2000, p. 1.
85 Ibid, p. 11.
86 Ibid, p. 11.
87 Ibid, p. 11.
88 "The Chiropractic Profession" By David A. Chapman-Smith, NCMIC Group Inc., 2000, p. 1.
89 "The Chiropractic Profession: Its Education, Practice, Research and Future Directions" By David A. Chapman-Smith, West Des Moines, IA: NCMIC Group Inc., 2000, p. 3.
90 "Trick or Treatment: The Undeniable Facts About Alternative Medicine" By Simon Singh and Edzard Ernst, New York, NY: W. W. Norton & Company, Inc., p. 163; "Dr. Chester A. Wilk v. American Medical Association" 895 F.2d 352 (7th Cir. 1990).
91 "Trick or Treatment: The Undeniable Facts About Alternative Medicine" By Simon Singh and Edzard Ernst, New York, NY: W. W. Norton & Company, Inc., p. 163.
92 "Dr. Chester A. Wilk v. American Medical Association" 895 F.2d 352 (7th Cir. 1990).
93 Ibid.
94 "How Can Chiropractic Become a Respected Mainstream Profession? The Example of Podiatry" By Donald R. Murphy et al., Chiropractic & Osteopathy, Vol. 16, No. 10 (August 2008), p. 2.

healthcare professionals ranked doctors of chiropractic last in terms of ethics and honesty.[95] Furthermore, utilization of chiropractic services is still not common. A survey of HMO members suffering from chronic musculoskeletal pain found that 39% of the respondents sought out the services of a chiropractor.[96]

> *Most American felt neutral about chiropractors as honest and ethical, with only 36% giving them a high ethical rating.*[97]

Although chiropractic care is often deemed as *complementary* or *alternative therapy*, the profession "is also in some sense a 'parallel' profession to medicine," particularly in cases in which patients seek chiropractic care as their source of primary care and respond favorably to treatments rendered.[98] As discussed in the *Introduction*, for purposes of this *Guide*, chiropractors are considered an allied health profession.

DESCRIPTION AND SCOPE

Scope

Chiropractic treatment focuses on *spinal manipulation* (referred to as *spinal adjustment*) and the body's natural power to heal itself without relying on drugs or surgery.[99] Chiropractors use various forms of therapy, including massage, ultrasound, electricity, acupuncture, and heat, as well as various supports (e.g., braces) when providing patient care.[100] Treatments can include natural and noninvasive physical therapy modalities, exercise programs, nutritional advice, orthotics, lifestyle modifications, and other patient education.[101] Surveys report that approximately 80% of chiropractors used some form of nutritional counseling in their practices.[102] The expansion of chiropractic practice to include provision of nutrition services, as well as vitamin and food supplements, has been utilized as a means to strengthen patient bones, joints, and immune systems.[103] Chiropractors assess patients through clinical examinations, laboratory testing, diagnostic imaging, and other diagnostic interventions.[104] If chiropractic

95 Ibid.
96 "Acupuncture and chiropractic utilization among chronic musculoskeletal pain patients at a health maintenance organization" By C. Elder et al., BMC Complementary and Alternative Medicine, Vol. 12, Suppl. 1 (2012), p. 279.
97 "Gallup Poll: Americans Have Low Opinion of Chiropractors' Honesty and Ethics" Dynamic Chiropractic, Vol. 25, Issue 03 (January 29, 2009), p. 2.
98 "Chiropractic Care of the Orthopedic Patient" By Stephen Bolles, Techniques in Orthopaedics, Vol. 18, No. 1 (2003), p. 87.
99 "The Chiropractic Profession: Its Education, Practice, Research and Future Directions" By David A. Chapman-Smith, West Des Moines, IA: NCMIC Group Inc., 2000, p. 1-2.
100 "Occupational Outlook Handbook, 2014-2015 Edition: Chiropractors" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-6 (Accessed 4/6/15).
101 "What is Chiropractic?" American Chiropractic Association, http://www.acatoday.org/level2_css.cfm?T1ID=13&T2ID=61 (Accessed 6/22/09).
102 "A Survey of Chiropractors' Use of Nutrition in Private Practice" By Dean L. Smith & Diana M. Spillman, Journal of Chiropractic Humanities (2001), p. 4; "Nutritional Counseling in the Chiropractic Practice: A Survey of New York Practitioners" By Denise Holtzman and Jeanmarie Burke, Journal of Chiropractic Medicine, Vol. 6 (2007), p. 30.
103 "Build a Nutrition Ancillary in 4 Basic Steps" By Rich Smith, ChiroEco, May 2009, http://www.chiroeco.com/chiropractic/news/7896/1168/Build-a-nutrition-ancillary-in-4-basic-steps/ (Accessed 11/04/09).
104 "What is Chiropractic?" American Chiropractic Association, http://www.acatoday.org/level2_css.cfm?T1ID=13&T2ID=61 (Accessed 6/22/09).

treatment is not appropriate, a chiropractor typically will refer patients to the appropriate healthcare provider.[105]

> *Surveys report that approximately 80% of chiropractors used some form of nutritional counseling in their practices.*
>
> ***Dean L. Smith & Diana M. Spillman, 2001;Denise Holtzman & Jeanmarie Burke, 2007.***

Nationally, the annual costs of care for low back pain range exceed $100 billion, with one third of these costs coming from direct costs.[106]

Most chiropractic patients seek treatment for musculoskeletal and nervous system disorders; with low back/pelvis pain treated the most (23.6%); then neck pain (18.7%); headache or facial pain (12.0%); mid-back pain (11.5%); lower extremity pain (8.8%); upper extremity pain (8.3%); and the remaining treatments for wellness, chest pain, abdominal pain, and other non-musculoskeletal conditions.[107]

> *While there is a small fraction of chiropractors who believe chiropractors should be allowed to prescribe medication, the World Federation of Chiropractic stated that it was against the chiropractic principal to use prescription drugs and those patients that need that kind of treatment should be referred to a different practitioner.*[108]

Education and Training

As of 2015, seventeen *Doctor of Chiropractic* programs in the U.S. are accredited by the *Council on Chiropractic Education*. Of the 17 CCE accredited chiropractic college, 16 are also accredited by regional accrediting bodies, which focus on the whole institution, unlike the CCE, which only focuses on the chiropractic program.[109]

To earn a chiropractic degree, candidates must complete at least 90 semester hours of undergraduate education and four years of chiropractic education in an accredited program.[110] Although some chiropractic colleges require a bachelor's degree as a threshold requirement for admission, others do not.[111] In 2014, only two-thirds of chiropractors held a bachelor's degree, but this number has steadily increased since 1991.[112]

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105 "What is Chiropractic?" American Chiropractic Association, http://www.acatoday.org/level2_css.cfm?T1ID=13&T2ID=61 (Accessed 6/22/09).

106 "Lumbar Disc Disorders and Low-Back Pain: Socioeconomic Factors and Consequences" By Jeffrey Katz, The Journal of Bone & Joint Surgery, Vol. 88-A, Supp. 2 (2006), p. 21-24.

107 "Practice Analysis of Chiropractic 2015" National Board of Chiropractic Examiners, January 2015, http://www.nbce.org/wp-content/uploads/chapter_08.pdf (Accessed 4/6/15), p. 90.

108 "Use of Prescription Drugs," WFC Policy Statement, World Federation of Chiropractic, April 30, 2003.

109 "CCE-US Accredited Colleges" Federation of Chiropractic Licensing Boards Official Directory, January 13, 2015, http://directory.fclb.org/Colleges/USColleges.aspx (Accessed 4/6/15).

110 "How to Become a Chiropractor" Bureau of Labor Statistics, Occupational Outlook Handbook, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-4 (Accessed 4/10/15).

111 "Occupational Outlook Handbook, 2014-2015 Edition: Chiropractors" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-6 (Accessed 4/6/15); "Job Analysis of Chiropractic 2005: A Project Report, Survey Analysis, and Summary of the Practice of Chiropractic Within the United States" The National Board of Chiropractic Examiners, January 2005, p. 80.

112 "Practice Analysis of Chiropractic 2015" National Board of Chiropractic Examiners, January 2015, http://www.nbce.org/wp-content/uploads/chapter_07.pdf (Accessed 4/6/15), p. 79.

The U.S Council on Chiropractic Education (CCE) has been recognized by the Department of Education since 1971.[113]

Chiropractic curriculums generally require a minimum of 4,200 hours of clinical, laboratory, and classroom study, although the average graduate will reach 4,820 hours of study.[114] The last two years of training focus exclusively on clinical experience and spinal manipulation.[115] Licensure requires a chiropractic degree and passage of both state and national examinations.[116]

Chiropractic colleges also offer post-doctoral training in chiropractic specialties consisting of 300 to 400 hours of continued education and a passing score on specialty exams administered through specialty chiropractic associations that are branches of the *American Chiropractic Association* (ACA).[117] Chiropractic physicians who pursue advance degrees and pass the required exams obtain "diplomate" status in the specialized field.[118] See *Specialties* in this section for more information on chiropractic specialties.

Specialties

Specialization is a growing trend within the chiropractic profession.[119] Even though a diplomate cannot charge more for his or her services than an unspecialized chiropractor, the title qualifies him or her as an expert, which may create a competitive advantage.[120] In addition, specialization generates more referrals from patients and professionals who focus in different chiropractic specialties. The ACA has nine councils that offer ten separate diplomate programs.[121] See Table 10-5 for a list of these programs.

Within the ACA, there are nine councils for the ten chiropractic specializations, each of which is linked to a professional association that administers the certifications for its particular specialty. These associations/boards are laid out in the Specialties section. Within specialty associations, if sub-specialties are recognized, each sub-specialty will maintain a national association of fellows.[122]

113 "Doctor of Chiropractic Degree Programs and Solitary Purpose Institutions Holding Accredited Status with the Council on Chiropractic Education," Federation for Chiropractic Licensing Boards, Official Directory, http://directory.felb.org/Colleges/tabid/125/Default.aspx (Accessed 7/13/09).

114 "Chiropractic Education" American Chiropractic Association, http://www.acatoday.org/level2_css.cfm?T1ID=13&T2ID=66 (Accessed 6/22/09).

115 "Occupational Outlook Handbook, 2014-2015 Edition: Chiropractors" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-6 (Accessed 4/6/15).

116 Ibid.

117 "Pursuing a Diplomate" By Lori A. Burkhart, American Chiropractic Association, https://www.acatoday.org/content_css.cfm?CID=4919 (Accessed 4/9/15); "Occupational Outlook Handbook, 2014-2015 Edition: Chiropractors" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-6 (Accessed 4/6/15).

118 "Occupational Outlook Handbook, 2014-2015 Edition: Chiropractors" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-6 (Accessed 4/6/15).

119 "Chiropractic Specialties on the Rise" By Gina Shaw, American Chiropractic Association, July 9, 2009, http://www.acatoday.org/print.cfm?CID=2323 (Accessed 7/9/09).

120 Ibid.

121 Ibid.

122 "Approved Chiropractic Specialty Programs," American Chiropractic Association, http://www.acatoday.org/pdf/ApprovedChiropracticSpecialtyPrograms.pdf (Accessed 11/16/09).

Table 10-5: Chiropractic Specialties and Descriptions

Title	Description
Sports Physician	Specialists use chiropractic and exercise science to treat sports injuries and enhance athletic performance and physical fitness.*
Occupational Health	Specialists work to both prevent and treat workplace neuromusculoskeletal injuries and illnesses.**
Orthopedics	Specialists diagnose and treat patients based on knowledge of "bones, joints, capsules, discs, muscles, ligaments, tendons, and complete neurological components."†
Neurology	Specialists focus treatment around neurological principles and functioning.* Subspecialties include electrodiagnostic specialties, vestibular rehabilitation, childhood development disorders, and functional neurology.††
Diagnosis and Management of Internal Disorders	These specialists, generally considered primary care Doctors of Chiropractic, treat conditions from allergies to thyroid problems and provide a wider array of services than typical spinal adjustments, such as blood chemistries and hormone testing. Doctors of Chiropractic internists are limited by the specific scope of practice laws of the state in which they practice.‡
Clinical Nutrition	Specialists use nutrition in the treatment of disease within the practice of chiropractic.‡‡
Chiropractic Physiological Therapeutics and Rehabilitation	Specialists combine chiropractic techniques with rehabilitation and physiotherapy.§
Diagnostic Imaging (Radiology)	Specialists "recommend, supervise, and interpret radiologic studies as well as advanced imaging procedures. They advise referring physicians on the necessity and appropriateness of radiologic services and whether to select or to avoid certain diagnostic or clinical procedures."§§
Acupuncture	Specialists employ the principles and practice of acupuncture to further chiropractic treatment.*
Pediatrics	Specialists provide chiropractic care for children.*

* *"Specialty Councils" American Chiropractic Association" http://www.acatoday.org/level2_css.cfm?TID=10&T2ID=116 (Accessed 10/9/09).*
** *"Council on Occupational Health Homepage" American Chiropractic Association Council on Occupational Health, http://www.acacoh.com/ (Accessed 10/12/09).*
† *"Definition of Chiropractic Orthopedics" American Chiropractic Association Council on Chiropractic Orthopedics, http://www.ccodc.org/page2.html (Accessed 10/12/09).*
†† *Sub-Specialty Certification, By the American College of Functional Neurology, acfnsite.org, 2009, http://www.acfnsite.org/subspecialty certification.php?pg=4.*
‡ *"Chiropractic Specialties on the Rise" By Gina Shaw, American Chiropractic Association, July 9, 2009, http://www.acatoday.org/print.cfm? CID=2323 (Accessed 7/9/09), p. 1.*
‡‡ *"Council on Nutrition Homepage" American Chiropractic Association Council on Nutrition, http://www.councilonnutrition.com/home.php (Accessed 10/12/09).*
§ *"The ACRB IS For Patients" American Chiropractic Rehabilitation Board" http://www.acrb.org/for-patients.html (Accessed 10/16/09).*
§§ *"Definition of a Chiropractic Radiologist," American Chiropractic Board of Radiology, 2009, http://www.acbr.org/index.html (Accessed 11/9/09).*

Chiropractic specializations are still relatively unheard of outside of the chiropractic field.[123] In an effort to raise awareness and acceptance of diplomate certification, the specialty boards for neurology and nutrition have earned accreditation by the National Commission for Certifying Agencies, a branch of the National Organization for Competency Assurance.[124] In addition, some diplomate councils, most notably the councils for sports physicians and orthopedists, are converting their curriculums to ones that grant master's degrees.[125]

123 "Chiropractic Specialties on the Rise" By Gina Shaw, American Chiropractic Association, July 9, 2009, http://www.acatoday.org/print.cfm?CID=2323 (Accessed 7/9/09).
124 Ibid.
125 Ibid.

INDUSTRY TRENDS

Characteristics and Distribution

Demographically, chiropractors are predominantly male, with women representing 25.5% of the workforce, and Caucasian, with only non-white demographics representing 21.75% of the chiropractic workforce.[126] Most chiropractors (60%) are between the ages of 35 and 55, with an additional 18% over the age of 55.[127] The majority of chiropractors are independent practitioners, with self-employed chiropractors making up 37% of practitioners. However, a small percentage of professionals practice in hospital or clinical settings. [128] Approximately 34% of chiropractors practice in a city, followed by 31% in a suburb, and 19% in a small community.[129] Because most chiropractors remain in the field until they retire, replacement needs for new chiropractic practices arise almost completely from retirements. This is illustrated by having approximately 38% of the chiropractic workforce practicing more than 25 years, and less than 2%of the workforce with fewer than two years of experience.[130]

Supply and Demand

The BLS estimates that, in 2014, there were 29,830 chiropractors employed in the U.S.[131] Furthermore, the BLS projects that the supply of chiropractors will grow by 15% through 2022, up to 50,900.[132] This rate of growth is slightly faster than the growth rate for all occupations, but slower than the growth rate for other health providers.[133] Improving attitudes towards alternative forms of healthcare, the aging of the baby-boomer population (which will likely increase the prevalence of certain musculoskeletal conditions), and consumer preference for treatments that use neither medications nor surgery are all increasing demand for chiropractic services.[134] This growth in demand, and the corresponding growth in supply, may provide patients with supplemental or substitute sources of healthcare services, during a period when traditional physician services are projected to fall short of demand.

126 "Practice Analysis of Chiropractic 2015" National Board of Chiropractic Examiners, January 2015, http://www.nbce.org/wp-content/uploads/chapter_07.pdf (Accessed 4/6/15), p. 78; "The U.S. Health Workforce Chartbook: Part II: Clinicians and Health Administration" Health Resources and Services Administration, November 2013, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/chartbook/chartbookpart2.pdf (Accessed 4/7/15), p. 6.

127 "The U.S. Health Workforce Chartbook: Part II: Clinicians and Health Administration" Health Resources and Services Administration, November 2013, http://bhpr.hrsa.gov/healthworkforce/supplydemand/usworkforce/chartbook/chartbookpart2.pdf (Accessed 4/7/15), p. 6.

128 "Occupational Outlook Handbook, 2014-2015 Edition: Chiropractors" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-6 (Accessed 4/6/15).

129 "Practice Analysis of Chiropractic 2015" National Board of Chiropractic Examiners, January 2015, http://www.nbce.org/wp-content/uploads/chapter_07.pdf (Accessed 4/6/15), p. 79.

130 Ibid, p. 82.

131 "Occupational Employment and Wages, May 2014: 29-1011 Chiropractors" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291011.htm (Accessed 4/7/15).

132 "Occupational Outlook Handbook, 2014-2015 Edition: Chiropractors" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-6 (Accessed 4/6/15).

133 Ibid.

134 Ibid.

PSYCHOLOGY

OVERVIEW

The study of *psychology*, dating back to ancient Greece, has evolved into a highly specialized discipline of medical practice related to the understanding of human behavior,[135] which "…embraces all aspects of the human experience...in every conceivable setting."[136] Psychologists can practice in a variety of locations, including hospitals, clinics, schools, and private practices.[137]

DESCRIPTION AND SCOPE

Scope

Research psychologists study the physical, emotional, cognitive, and social aspects of human behavior.[138] Psychologists conduct psychological and neuropsychological testing, make clinical diagnoses, and design treatment plans for patients.[139] Psychologists may not prescribe medication by law in 48 states, the exceptions being Louisiana and New Mexico.[140] Psychologists who practice in health-related fields provide care in clinics, hospitals, schools, and private settings.[141] Those who choose to work in applied settings, such as businesses, industries, governments, and nonprofit organizations, provide training, conduct research, and design organizational systems.[142]

Education and Training

Generally, a doctoral degree is required in order for a psychologist to practice independently.[143] Psychologists with a *doctoral degree* (PhD) or a *Doctorate of Psychology* (PsyD) complete five to seven years of graduate study.[144] Additionally, PhD degrees require completion of a dissertation based on independent research.[145] Course work for PhD candidates focuses primarily

135 "About APA" American Psychological Association, http://www.apa.org/about/ (Accessed 7/13/09); "History of Psychology: A Sketch and an Interpretation" By James Mark Baldwin, Vol. 1, New York, NY: G.P. Putnam's Sons, 1913, p. 29.
136 "About APA" American Psychological Association, http://www.apa.org/about/ (Accessed 7/13/09).
137 "Occupational Outlook Handbook, 2014-15 Edition: Psychologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/life-physical-and-social-science/print/psychologists.htm (Accessed 4/6/15).
138 Ibid.
139 "Comparison of Psychiatrists and Psychologists in Clinical Practice" By David P. Pingitore, et al., Psychiatric Services, Vol. 53, No. 8 (August 2002), http://psychservices.psychiatryonline.org/cgi/reprint/53/8/977 (Accessed 9/01/09), p. 997.
140 "Louisiana Grants Psychologists Prescriptive Authority" By Jennifer D. Holloway, American Psychological Association, May 5, 2004, http://www.apa.org/monitor/may04/louisianarx.aspx (Accessed 6/02/10); "Prescribing Privileges for Psychologists: An Overview" National Alliance on Mental Illness, 2009, http://www.nami.org/Template.cfm?Section=Issue_Spotlights&template=/ContentManagement/ContentDisplay.cfm&ContentID=8375 (Accessed 11/3/09).
141 "Occupational Outlook Handbook, 2014-15 Edition: Psychologists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2008, http://www.bls.gov/oco/ocos056.htm (Accessed 7/13/09).
142 Ibid.
143 "Graduate Education in Psychology" American Psychological Association, http://www.apa.org/ed/graduate/considering.html (Accessed 7/13/09).
144 "Occupational Outlook Handbook, 2014-15 Edition: Psychologists" Bureau of Labor Statistics, Washington, DC: Government Printing Office, 2008, http://www.bls.gov/oco/ocos056.htm (Accessed 7/13/09).
145 Ibid.

on research methods, and a PsyD degree emphasizes clinical training.[146] Psychologists with a doctoral degree can work in private practices or clinical settings.[147]

Stanley Hall introduced the first psychology lab at Johns Hopkins University.[148]

Specialties

In 1995, the American Psychological Association established the *Commission for the Recognition of Specialties and Proficiencies in Professional Psychology* (CRSPPP), a governing body that "coordinate[s] policies and procedures to improve quality and process in recognition of specialties and proficiencies in professional psychology..."[149] CRSPPP recognizes twelve specialties, including (1) clinical neuropsychology, (2) clinical health psychology, (3) psychoanalytic psychology, (4) school psychology, (5) clinical psychology, (6) clinical child psychology, (7) counseling psychology, (8) industrial-organizational psychology, (9) behavioral psychology, (10) forensic psychology, (11) family psychology, and (12) professional geropsychology.[150] Additionally, the CRSPPP recognizes proficiencies including police psychology, biofeedback, psychopharmacology, treatment of alcohol and other psychoactive substance use disorders, sport psychology, assessment and treatment of serious mental illness, and personality assessment.[151] Recognition of psychologist specialties and proficiencies serves to inform the public about the practitioner's background and area(s) of expertise.[152]

The *American Board of Professional Psychology* (ABPP) is the governing body that oversees accrediting specialty boards.[153] To become board certified in a specialty, a candidate must have a doctorate degree from an accredited program, be licensed in his or her state, and pass a specialty-specific examination administered by one of the 13 specialty boards recognized by the ABPP.[154]

Over half (53.9%) of the members of the American Psychological Association are over the age of 55.

American Psychological Association, February 2015.

146 Ibid.
147 Ibid.
148 "What is Psychology? What Are The Branches of Psychology," By Christian Nordqvist, Medical News Today, June 22, 2009, http://www.medicalnewstoday.com/article/articles/154874.php (Accessed 7/13/09).
149 "APA Association Rule 90-5: Commission for the Recognition of Specialties and Proficiencies in Professional Psychology" American Psychology Association, APAOnline, 2009, http:www.apa.org/crsppp/mission.html (Accessed 11/6/09).
150 "Recognized Specialties and Proficiencies in Professional Psychology" American Psychological Association, 2009, http://www.apa.org/crsppp/rsp.html. (Accessed 8/26/09).
151 Ibid.
152 "The Historical Roots of CRSPPP and Its Mission to Recognize Specialties and Proficiencies in Professional Psychology" American Psychological Association, 1999, http://www.apa.org/crsppp/rsp.html (Accessed 8/26/09).
153 "Specialty Board Certification in Professional Psychology" American Board of Professional Psychology, 2005, http://www.abpp.org/brochures/genbrochure2005.pdf (Accessed 8/26/09), p. 3.
154 Ibid, p. 10, 11.

INDUSTRY TRENDS

Characteristics and Distribution

As of January 2014, according to the BLS, there were 160,200 psychologists employed in the United States.[155] About 31% of these worked in an educational setting, 29% worked in healthcare or social assistance, and just under a third were self-employed.[156] Although the psychologist workforce is relatively balanced in terms of gender (42% male, 57% female, 1% not specified), it is unbalanced in terms of race and age.[157] Racially, members of the *American Psychological Association* are 57% white, 2% Asian, 4% all other, and 37% did not specify.[158] In terms of age, the psychologist workforce is skewed towards older cohorts, with the top four most populous age demographics being 70 or older (18.5%), 60-64 (13.1%), 65-69 (12.8%), and 55-59 (9.5%).[159] These shares indicate that within the next ten years, over half (53.9%) of the psychologists in the U.S. may approach or enter retirement.

Supply and Demand

At time of publishing, many areas of the U.S. are experiencing a shortage of mental health professionals. The HRSA has designated over 4,000 areas as *mental health professional shortage areas*, representing over 1.3 million Americans who would need over 900 additional mental health professionals in order to adequately meet their needs.[160] The BLS projects the supply of psychologists to grow by about 12% through 2022, roughly equivalent to the growth of most occupations over the same period.[161] However, considering the current shortage of mental health professionals, as well as the projected growth in demand for psychologists (primarily resulting from increased utilization of psychological services as the baby-boomer generation ages),[162] this moderate growth in supply may not mitigate the present shortage in the years to come.

CONCLUSION

The importance of mental healthcare services, such as psychology, has historically been ignored. The passage of the *Mental Health Parity and Addiction Equity Act* (MHPAEA) in 2008 was an important step toward equating coverage between mental and physical healthcare needs. However, in this era of healthcare reform, psychologists are calling for even more change. Practitioners are "urg[ing] policymakers to integrate psychology services into primary care,

155 "Occupational Outlook Handbook, 2014-15 Edition: Psychologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/life-physical-and-social-science/print/psychologists.htm (Accessed 4/6/15).
156 Ibid.
157 "2014: APA Member Profiles" American Psychological Association, February 2015, http://www.apa.org/workforce/publications/14-member/index.aspx (Accessed 4/6/15), Table 1.
158 Ibid.
159 Ibid.
160 "Designated Health Professional Shortage Areas Statistics" Health Resources and Services Administration, April 3, 2015, p. 3.
161 "Occupational Outlook Handbook, 2014-15 Edition: Psychologists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/life-physical-and-social-science/print/psychologists.htm (Accessed 4/6/15).
162 Ibid.

preventative services, and benefit packages."[163] Mental health professionals stress that integration of psychological services into primary care and preventative care would likely result in improved outcomes, functioning, and quality of life for patients.[164] Psychologists are also asking to be included in Medicare's definition of "physician" in order to increase access to care.[165] Additionally, the rising supply of doctoral-level psychologists, the declining levels of psychiatrists, and the increasing awareness of mental health issues in general has spurred psychologists to lobby for the expansion of their professional services to include prescribing rights.[166] However, trends indicate that lawmakers are generally resisting such expansion, with only two states expanding the scope of services psychologists may provide.[167] Nonetheless, psychologists continue to push lawmakers toward psychologist-friendly policies to increase both access to and quality of care for patients requiring mental health services.

PODIATRY PRACTICES

OVERVIEW

The recognition of podiatry as a healthcare profession is relatively recent, but podiatry itself is as old as medicine.[168] The demand for foot care has existed for millennia and can be traced back to ancient Egyptian and Greek civilizations.[169] However, modern podiatry (or as it was once referred to as, chiropody) can be traced back to 1845 when a German author, Lewis Durlacher, published a book on the general management of the feet.[170]

> *The founder of podiatry is considered to be Lewis Durlacher in 1845.*
>
> ***Leonard A Levy, Churchill Livingstone, 1990.***

> *The American Medical Association gave formal recognition to podiatry in 1939.*
>
> ***Leonard A Levy, Churchill Livingstone, 1990.***

163 "Psychology Focuses on Health Care Reform" American Psychological Association Practice Organization, March 26, 2009, http://www.apapracticecentral.org/advocacy/reform/psych-focus.aspx (Accessed 6/2/10).
164 "Primary Care Providers' Role in Mental Health" Judge David L. Bazelon Center for Mental Health Law, 2009, http://www.bazelon.org/issues/healthreform/issuepapers/PrimaryCare.pdf (Accessed 8/27/09), p. 1.
165 "Congress Should Protect Medicare Mental Health Payment" APA Practice Organization, February 2009, http://c.ymcdn.com/sites/www.nyspa.org/resource/resmgr/Advocacy/Medicare_Factsheet_2009-1.pdf (Accessed 4/9/15).
166 "Prescribing Privileges for Psychologists: An Overview" National Alliance on Mental Illness, 2009, http://www.nami.org/Template.cfm?Section=Issue_Spotlights&template=/ContentManagement/ContentDisplay.cfm&ContentID=8375 (Accessed 11/3/09).
167 Ibid.
168 "Podiatric Medicine: History and Education" By James E. Bates, Journal of the American Podiatry Association, Vol. 65, No. 11 (November 1975), p. 1076.
169 "Principles and Practice of Podiatry" By Leonard A. Levy and Vincent J. Hethrington, Des Moines, IA: Churchill Livingstone Inc., 1990, p. 7; "Dentistry Definitions" American Dental Association, 2009, http://www.ada.org/prof/ed/specialties/definitions.asp (Accessed 5/29/09).
170 "Principles and Practice of Podiatry" By Leonard A. Levy and Vincent J. Hethrington, Des Moines, IA: Churchill Livingstone Inc., 1990, p. 3.

In 1846, the first U.S. chiropodist office was opened by Nehemiah Kenison in Boston.[171] Prior to 1912, podiatrists trained under a preceptor.[172] In 1917, the first charter was obtained for an institute of podiatry in New York.[173] By 1937, the formal training period to become a podiatrist was raised to four years.[174] Finally, in 1939, the AMA gave formal recognition to the practice of podiatry.[175]

DESCRIPTION AND SCOPE

Scope

Podiatry is a health profession concerned with medical and surgical diagnoses and treatment of disorders of the foot, ankle, and related structure of the leg.[176] Podiatrists are the only medical professionals "trained exclusively to provide total care of the foot."[177]

> *Podiatrists are the only medical professionals "trained exclusively to provide care of the foot."*
>
> ***Institute for Career Research, 2002.***

Podiatric treatment can include a multitude of invasive and noninvasive therapies. Treatments can include the prescription of medication, *orthotics*, or both; surgical procedures; the establishment of the therapeutic programs; and the application of appliances to feet or footwear.[178] Podiatrists assess patients through studies of case histories, physical examinations, laboratory testing, diagnostic imaging, and other diagnostic procedures.[179] If a condition is outside the scope of podiatric practice, the podiatrist will refer patients to the appropriate healthcare provider.[180]

171 "Principles and Practice of Podiatry" By Frank Weinstein, Philadelphia, PA: Lea & Febiger, 1968, p. 5.
172 Ibid.
173 "Occupational Employment Handbook, 2014-15 Edition: Podiatrists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/podiatrists.htm (Accessed 4/6/15); "Principles and Practice of Podiatry" By Frank Weinstein, Philadelphia, PA: Lea & Febiger, 1968, p. 5.
174 "Principles and Practice of Podiatry" By Frank Weinstein, Philadelphia, PA: Lea & Febiger, 1968, p. 4.
175 "Principles and Practice of Podiatry" By Leonard A. Levy and Vincent J. Hethrington, Des Moines, IA: Churchill Livingstone Inc., 1990, p. 7.
176 "Podiatry Source Book" By Ivy Alexander, Detroit, Michigan: Omnigraphics, Inc., 2007, p. 15.
177 "Career as A Podiatrist: Doctor Specializing in Foot Healthcare" The Institute for Career Research, 2002, www.careers-internet.org (Accessed 6/01/10), p. 5; "Podiatric Education" American Association of Colleges of Podiatric Medicine, 2001, http://www.aacpm.org/html/careerzone/career_podeducation.asp (Accessed 7/06/09).
178 "Podiatrists Consumer Fact Sheet" Division of Professional Licensure, 2009, http://www.mass.gov/?pageID=ocaterminal&L=5&L0=Home&L1=Government&L2=Our+Agencies+and+Divisions&L3=Division+of+Professional+Licensure&L4=Consumer+Fact+Sheets&sid=Eoca&b=terminalcontent&f=dpl_consumer_factsheet_pd&csid=Eoca (Accessed 6/1/10).
179 "Podiatrists Consumer Fact Sheet" Division of Professional Licensure, 2009, http://www.mass.gov/?pageID=ocaterminal&L=5&L0=Home&L1=Government&L2=Our+Agencies+and+Divisions&L3=Division+of+Professional+Licensure&L4=Consumer+Fact+Sheets&sid=Eoca&b=terminalcontent&f=dpl_consumer_factsheet_pd&csid=Eoca (Accessed 6/1/10); "About Podiatry" American Podiatric Medical Association, 2009, http://www.apma.org/MainMenu/AboutPodiatry.aspx (Accessed 7/20/09).
180 "Career as A Podiatrist: Doctor Specializing in Foot Healthcare" The Institute for Career Research, 2002, www.careers-internet.org (Accessed 6/1/10), p. 6.

Education and Training

A podiatrist is a *Doctor of Podiatric Medicine* (DPM) and also is referred to as a podiatric physician or a podiatric surgeon.[181] Initially, schools conferred as many as three different degrees upon graduates.[182] However, by 1964, all podiatric medical schools began conferring the standardized degree of DPM.[183]

To become a podiatrist, an individual must complete at least three years (ninety credit hours) at an accredited college institution and an additional four years of study at a podiatric medical school, as well as receive a passing score on the national and state licensing exams (National Board examinations).[184] The podiatric medical school must be accredited by the *Council on Podiatric Medical Education*, which is recognized by the *Council for Higher Education Accreditation* and the U.S. Department of Education.[185]

The first two years of podiatric education focus on classroom instruction and laboratory work in the basic sciences.[186] The last two years focus on clinical sciences and patient care judgment.[187] After the completion of the four-year academic curriculum, candidates are required to complete three years of residency training at an approved healthcare institution.[188] Upon completion of an approved residency program, podiatrists may take specialty certifying boards.[189]

Specialties

Specialty certifying boards exist in the recognized areas of podiatric orthopedics, podiatric surgery, and primary podiatric medicine.[190] In preparation to become a podiatrist through a residency program, students can develop specializations in one or more areas of podiatric medicine (see Table 10-6).[191]

> *There are only three recognized areas of specialty in podiatry: Surgery, Primary Care, and Orthopedics.*
>
> ***Council on Podiatric Medical Education, 2009 .***

181 "About Podiatry" American Podiatric Medical Association, 2009, http://www.apma.org/MainMenu/AboutPodiatry.aspx (Accessed 7/20/09).
182 "Principles and Practice of Podiatry" By Leonard A. Levy and Vincent J. Hethrington, Des Moines, IA: Churchill Livingstone Inc., 1990, p. 7.
183 Ibid.
184 "Podiatric Education" American Association of Colleges of Podiatric Medicine, 2001, http://www.aacpm.org/html/careerzone/career_podeducation.asp (Accessed 7/13/09); "Podiatrist" Health Careers Center, http://www.mshealthcareers.com/careers/podiatrist.htm (Accessed 4/9/15).
185 "Recognized Accrediting Organizations" Council for Higher Education Accreditation, 2005, http://www.ed.gov/about/bdscomm/list/hiedfuture/reports/recognized-organizations.pdf (Accessed 12/9/09); "Standards and Requirements for Accrediting Colleges of Podiatric Medicine" Council on Podiatric Medical Education, July 2008, http://www.apma.org/Members/Education/CPMEAccreditation/PodiatricMedicalColleges/CPME120.aspx (Accessed 7/20/09).
186 "Podiatric Education" American Association of Colleges of Podiatric Medicine, 2001, http://www.aacpm.org/html/careerzone/career_podeducation.asp (Accessed 7/13/09).
187 Ibid.
188 "How to Become a Podiatrist" Bureau of Labor Statistics, Occupational Outlook Handbook, January 8, 2015, http://www.bls.gov/ooh/healthcare/podiatrists.htm#tab-4 (Accessed 4/10/15).
189 "Specialty Certifying Boards" Council on Podiatric Medical Education, 2009, http://www.apma.org/Members/Education/CPMEAccreditation/SpecialtyCertifyingBoards.aspx (Accessed 7/20/09).
190 Ibid.
191 "Specialty Areas in Podiatric Medicine" Barry University School of Podiatric Medicine, Barry University, 2015, http://barry.edu/podiatry/SpecialtyAreas.htm (Accessed 4/9/15).

Table 10-6: Podiatric Specialties*

Specialty	Description
Podiatric Orthopedics	Podiatric orthopedics is the treatment of foot and leg structures and functions through the use of orthotics, prosthetics, and special footwear.
Podiatric Surgery	Podiatric surgery is the treatment of foot and ankle problems through the use of operative procedures.
Podiatric Primary Care	Podiatric primary care is the diagnosis, treatment, and prevention in the family healthcare environment of podiatric conditions.
Podiatric Sports Medicine	Podiatric sports medicine is the diagnosis, treatment, and prevention of podiatric disorders in athletes.
Podopediatrics	Podopediatrics is the diagnosis, treatment, and prevention of children's foot podiatric problems.
Wound Care and Management	Wound care and management is the treatment and prevention of wounds to the foot and legs, including those related to chronic disease, such as diabetes.

* *"Specialty Areas in Podiatric Medicine" By Barry University School of Podiatric Medicine, Barry University, 2009, http://barry.edu/podiatry /SpecialtyAreas.htm (Accessed 7/13/09).*

INDUSTRY TRENDS

Characteristics and Distribution

In 2014 there were 8,910 podiatrists employed in the U.S., according to the BLS.[192] The vast majority (84%) of these providers worked in the offices of health practitioners or physicians, with small minorities working in hospitals (4%), outpatient care centers (2%), or other settings.[193] Geographically, podiatrists are generally concentrated in the northeastern part of the country, in states such as Rhode Island, Ohio, or New York. [194] Demographically, a 2012 survey found that the majority of podiatrists are older males, with 77% of the respondents being male, and the most populous age bracket being 51-60 (33% of respondents).[195]

Supply and Demand

Between 2012 and 2014, BLS estimates of the number of podiatrists in the U.S. dropped approximately 17%, from 10,700 to 8,910.[196] Such a decline may put the U.S. at risk of a shortage of podiatrists. However, the BLS projects that the supply of podiatrists will grow by approximately 23% from 2012 to 2022, significantly faster than the average U.S. occupation, which may be a response to increasing demand for podiatric services.[197]

The demand for podiatrists is driven by three components: (1) the aging population, (2) the prevalence of obesity, and (3) an increase in the prevalence of diabetes.[198] According to

192 "Occupational Employment and Wages, May 2014: 29-1081 Podiatrists" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291081.htm (Accessed 4/6/15).
193 Ibid.
194 Ibid.
195 "PM's 29th Annual Survey: Racing Ahead in the Post-Recession" By Stephanie Kloos Donoghue, Podiatry Management, February 2012, https://podiatrym.com/pm/Survey212.pdf (Accessed 4/6/15), p. 96.
196 "Occupational Outlook Handbook, 2014-15 Edition: Podiatrists" Bureau of Labor Statistics, March 25, 2015, http://www.bls.gov/oes/current/oes291081.htm (Accessed 4/6/15); "Occupational Employment Handbook, 2014-15 Edition: Podiatrists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/podiatrists.htm (Accessed 4/6/15).
197 "Occupational Outlook Handbook, 2014-15 Edition: Podiatrists" Bureau of Labor Statistics, January 8, 2014, http://www.bls.gov/ooh/healthcare/print/podiatrists.htm (Accessed 4/6/15).
198 Ibid.

projections, by 2050, the number of Americans over the age of 65 will surpass 83 million, nearly doubling the population of Americans over the age of 65 in 2012.[199] Forecasts have indicated that, by 2032, nationwide obesity rates could reach 44%.[200] Correspondingly, the incidence of type 2 diabetes has been projected to increase by a factor of 10 between 2010 and 2020, and then double again between 2020 and 2030.[201] As these three factors become more prevalent over the next several years, the increased supply of podiatrists projected by the BLS may be necessary in order to meet the future demand for podiatric services.

CONCLUSION

It is unclear how healthcare reform will affect podiatric services. As of 2012, six states do not cover podiatry services under Medicaid.[202] As a result of reduced budgets, reduced money for Medicaid, and an increased demand for Medicaid services, it is likely that states will continue to lower reimbursement to "optional" providers to meet budget constraints.[203] Conversely, in terms of Medicare reimbursements, changes in Medicare payments to podiatrists since the passage of the ACA have generally been small, with the biggest shifts being two percent increases in reimbursements (see *Appendix A* of *Chapter 2: Reimbursement Environment* in *An Era of Reform—The Four Pillars*).

199 "An Aging Nation: The Older Population in the United States" By Jennifer M. Ortman, et al., United States Census Bureau, May 2014, http://www.census.gov/prod/2014pubs/p25-1140.pdf (Accessed 4/6/15), p. 1.

200 "F as in Fat: How Obesity Threatens America's Future" Trust for America's Health, Robert Wood Johnson Foundation, September 2012, http://healthyamericans.org/assets/files/TFAH2012FasInFat18.pdf (Accessed 4/6/15), p. 3.

201 Ibid.

202 "Medicaid Benefits: Podiatrist Services" The Henry J. Kaiser Family Foundation, http://kff.org/medicaid/state-indicator/podiatrist-services/ (Accessed 4/6/15).

203 "Senator Bunning, Mikulski Introduce Bill to Ensure Medicaid Patients Have Access to Critical Podiatry Services" Jim Bunning, March 19, 2009, http://bunning.senate.gov/public/index.cfm?FuseAction=NewsCenter.NewsReleases&ContentRecord_id=2476f4b4-c345-62ee-ee11-e9c6fc3a4543&Region_id=&Issue_id= (Accessed 7/28/09); "The Crunch Continues: Medicaid Spending, Coverage and Policy in the Midst of a Recession" Kaiser Commission on Medicaid and the Uninsured, September 2009, http://www.kff.org/medicaid/upload/7985.pdf (Accessed 10/20/09), p. 72-75.

Table 10-7: Highlights in the Four Pillars

Allied Health Professionals	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Dentists	Nearly all states require dentists to be licensed, which generally requires the practitioner to hold a DDS or DMs Guidelines for administering anesthesia and sedation are regulated on a state by state basis, with state boards of dentistry charged with setting appropriate safety and delivery standards The Food and Drug Administration (FDA) monitors dental devices, including the dental amalgam used in some dental fillings	(1) (2) (3)	Generally, Medicare does not cover dental services, although Part A will pay for some dental services that a patient receives while in the hospital 47 states and the District of Columbia cover dental benefits in their Medicaid programs, the majority of which reimburse dentists under a fee-for-service (FFS) methodology	(4) (5)	Due to a dearth of specialized dentists, many general dentists are performing procedures that were, at one time, reserved for specialists In some states, dental hygienists may provide services to patients without the supervision of a dentist, leading to competition between dentists and dental hygienists	(6) (7)	Advancements in imaging technology improve ability to detect dental issues (e.g. cavities) and may be combined with new alternatives to drilling (e.g. dental lasers) Investment in nanotechnology has already led to advanced consumer products, and may improve fillings in the future Regenerative dentistry utilizes stem cells to repair or replace damaged tissue	(8)
Optometry	At the state level, optometrists are regulated and licensed by each state's board of optometry At the federal level, certain products (e.g. contact lenses) provided by optometrists are regulated by the FDA	(9) (10)	Generally, Medicare doesn't cover eyeglasses or contact lenses, though Part B will cover corrective lenses after cataract surgery Reimbursement for optometry services has slightly decreased over the last 3 years. In 2013, Medicare reimbursements under the Physician Fee Schedule (PFS) increased by 1% from 2012 levels. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 1%. In 2015, Medicare reimbursements under the PFS decreased from 2014 levels by 1%.	(11) (15) (16) (17)	Due to overlapping scopes of practice, optometrists may compete for market share with ophthalmologists to provide treatment to patients, and with opticians to dispense optical devices.	(12)	Advancements in imaging technology allow non-invasive, no-contact scans of a patient's eyes The Fugo Plasma Blade has been developed as an alternative method for conducting cataract surgery, allowing optometrists another option besides femtosecond laser devices to perform this common procedure.	(13) (18)

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Allied Health Professionals	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Chiropractic	In order to practice, chiropractors obtain both a Doctor of Chiropractic (DC) degree and a state license Congress has recently sought to expand access to chiropractic care for military veterans. In the 114th Congress, two senators offered Senate Bill 398, which would mandate that chiropractic care be a standard benefit for all recipients of care at Department of Veterans Affairs facilities.	(14) (19)	Medicare reimbursement for chiropractic services has increased over the last 3 years. In 2013, Medicare reimbursements under the PFS increased by 1% from 2012 levels. In 2014, Medicare reimbursements under the PFS increased from 2013 levels by 12%. In 2015, Medicare reimbursements under the PFS decreased from 2014 levels by 1%. Under the Section 2706 of the ACA, insurers may not discriminate against chiropractors based on their level of participation in health plans, likely increasing the amount of reimbursable patient encounters.	(15) (16) (17) (20)	Chiropractors frequently compete with osteopathic physicians, physical therapists, and other members of the medical community who provide spinal manipulation services. Generally, the chiropractic industry is quite fragmented, with the top four companies in the industry accounting for less than 1% of total industry revenue.	(21)	Chiropractors are increasingly utilizing low-level laser therapy to improve blood circulation in injured epithelial tissue, a key factor in healing wounds to the skin. Increased access to biological monitoring devices has allowed chiropractors improve the provision of preventive care for musculoskeletal injuries.	(22) (23)
Psychology	In order to practice, psychologists need, at minimum, a master's degree in psychology and a state license. Psychologists must obtain an additional license to prescribe medication. Increasingly, psychologists are becoming subject to regulatory requirements facing traditional physicians, including information privacy, fraud & abuse controls, and Medicare certifications.	(24) (25)	Medicare reimbursement for clinical psychology services has increased over the last 3 years. In 2013, Medicare reimbursements under the PFS decreased by 2% from 2012 levels. In 2014, Medicare reimbursements under the PFS increased from 2013 levels by 8%. In 2015, Medicare reimbursements under the PFS decreased from 2014 levels by 1%. Many states reduced reimbursement for psychology services after the 2008 recession, an effect still felt today.	(15) (16) (17) (26)	Psychologists compete primarily with psychiatrists for psychotherapy services. In addition, competition between psychologists and psychiatrists may increase further if clinical psychologists receive prescribing privileges through their state licensure. Psychologists also compete internally, as persons with master's degrees in psychology are now directly competing with persons with psychology doctoral degrees for new jobs.	(27) (28)	Psychologists frequently utilize "tele-psychology" in their practices. As early as 2008, over 87% of psychologists claimed to utilize electronic media to provide psychotherapy services. The use of computed tomography (CT) scans and other neurological imaging devices by research psychologists have increased in recent years, although its application to clinical practice is still minimal.	(29) (30)

Allied Health Professionals	Regulatory	Notes	Reimbursement	Notes	Competition	Notes	Technology	Notes
Podiatry	In order to practice, most states require podiatrists to complete a four-year podiatry program, finish a post-doctoral residency program, and earn a state license in podiatry. Like many other groups of physicians, podiatrists have been increasingly subject to audits by Medicare Recovery Audit Contractors (RAC) to determine if, and possibly recoup, improper Medicare payments.	(31) (32)	Reimbursement for podiatry services has remained constant over the last 3 years. In 2013, Medicare reimbursements under the PFS increased by 2% from 2012 levels. In 2014, Medicare reimbursements under the PFS decreased from 2013 levels by 1%. In 2015, Medicare reimbursements under the PFS remained constant from 2014 levels. Podiatrists with large private pay practices may experience a decrease in reimbursement as a result of insurance coverage expansions under the ACA due to narrowing of networks and limitations on podiatry benefits.	(15) (16) (17) (33)	Because the ACA incentivizes patient visits to primary care physicians, primary care physicians may become a greater source of market competition for podiatrists. Retail health clinics are becoming increasingly prevalent across the United States. The growth of these clinics - and the offering of basic podiatry services at these clinics - provides competition for podiatrists.	(34) (35)	Podiatrists are utilizing endoscopes - an "optical instrument that allows podiatrists to create precise incisions" - to improve the treatment of plantar fasciitis. As devices that improve skin grafting and wound dressing reach the market in the near future, the quality and efficiency of podiatry services may increase.	(36) (37)

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"Marketing Chiropractic to Medical Practices" by Christina L. Acamproa	A book describing the need for the chiropractic profession to begin redefining itself and integrating with the medical field.	"Marketing Chiropractic to Medical Practices" By Christina L. Acamproa, Jones and Bartlett Publishers, 2009.	n/a
Chiropractors Occupational Handbook 2014-2015 Edition	Statistics from the U.S. Bureau of Labor Statistics regarding the state of the chiropractic profession at the time of its publication.	"Chiropractors" Occupational Outlook Handbook, Occupational Information Network, Bureau of Labor Statistics, 2014-15 Edition, http://www.bls.gov/ooh/healthcare/chiropractors.htm (Accessed 4/9/15).	www.bls.gov
Journal of the American Dental Association (JADA)	JADA is the "nation's premier dental journal—a reliable, peer-reviewed source of information on dentistry and dental science" whose primary audience is dentists in clinical practice.	"JADA" American Dental Association, 2009, http://www.ada.org/en/publications/jada/ (Accessed 11/14/09).	http://jada.ada.org
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Centers for Medicare and Medicaid Services (CMS)	CMS is responsible for administering the publicly funded Medicare and Medicaid programs. The CMS website contains a significant amount of information relating to reimbursement and regulatory issues.	"Centers for Medicare and Medicaid Services" U.S. Department of Health and Human Services, 2009, www.cms.hhs.gov/ (Accessed 4/9/15).	www.cms.hhs.gov
Foundation Fighting Blindness (FFB)	The FFB raises money to fund research to "drive the research that will provide preventions, treatments and cures for people affected by retinitis pigmentosa, macular degeneration, Usher syndrome, and the entire spectrum of retinal degenerative diseases."	"About Us" Foundation Fighting Blindness, Spring 2008 www.blindness.org/index.php?option=com_content&view=article&id=65&Itemid=147 (Accessed 9/11/09).	www.blindness.org
National Eye Institute (NEI)	"As part of the federal government's National Institutes of Health (NIH), the National Eye Institute's mission is to 'conduct and support research, training, health information dissemination, and other programs with respect to blinding eye diseases, visual disorders, mechanisms of visual function, preservation of sight, and the special health problems and requirements of the blind.'" NEI funds and conducts groundbreaking research on visual disorders.	"Mission Statement," National Eye Institute, 2015, https://www.nei.nih.gov/about/mission (Accessed 4/9/15).	www.nei.nih.gov
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American Podiatric Medical Association	The largest association of podiatric physicians, it is dedicated to increasing awareness of foot and ankle health through education and legislative action.	"What is a Podiatrist?" American Podiatric Medical Association, 2015, http://www.apma.org/learn/content.cfm?ItemNumber=992&navItemNumber=558 (Accessed 4/9/15).	www.apma.org
National Board of Podiatric Medical Examiners	Develops and administers examinations for licensure in podiatric medicine.	"About Us" National Board of Podiatric Medical Examiners, National Board of Podiatric Medical Examiners, 2015, http://apmle.com/about-us (Accessed 4/9/15).	www.nbpme.info
Podiatry Management Online	A national practice and business magazine. Publishes articles and news of interest to podiatric physicians.	"Welcome to Podiatry Management Online" Podiatry Management Online, Podiatry Management, 2009, www.podiatrym.com (Accessed 4/9/15).	www.podiatrym.com

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Diagnostic and Statistical Manual of Mental Disorders (DSM)	Addresses the diagnosing of mental illnesses.	"Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition" By American Psychiatric Association, 1994, p. xvii.	n/a

Associations

Type of Organization	Professional Association	Description	Citation	Contact Information
Global	World Federation of Chiropractic	"The original World Federation of Chiropractic was established at the World Chiropractic Congress in Sydney, Australia in 1988. The voting members of the World Federation of Chiropractic (WFC) are national associations of chiropractors in 88 countries. The WFC represents them and the chiropractic profession in the international community."	"About WFC" World Federation of Chiropractic, www.wfc.org/website/index.php?option=com_content&view=section&id=6& Itemid=53&lang=en (Accessed 4/10/15).	World Federation of Chiropractic 1246 Yonge Street, Suite 203 Toronto, Ontario, Canada Phone: 1-416-484-9978 Fax: 1-416-484-9665 E-mail: info@wfc.org www.wfc.org
Global/ Professional	International Chiropractor's Association	Established in 1926 in Davenport, Iowa, by Dr. B. J. Palmer, ICA is the oldest international chiropractic association. ICA's mission is "[t]o advance chiropractic throughout the world as a distinct health care profession predicated upon its unique philosophy, science, and art."	"Historical Background" International Chiropractors Association, http://www.chiropractic.org/history (Accessed 4/10/15).	International Chiropractors Association 6400 Arlington Boulevard, Suite 800 Falls Church, Virginia 22042 Phone: 800-423-4690 E-mail: chiro@chiropractic.org www.chiropractic.org
National/ Professional	American Chiropractic Association	Based in Arlington, Va., ACA is the largest professional association in the world representing doctors of chiropractic. The ACA provides lobbying, public relations, professional and educational opportunities for doctors of chiropractic, funds research regarding chiropractic and health issues, and offers leadership for the advancement of the profession. The ACA promotes the highest standards of ethics and patient care, contributing to the health and well being of millions of chiropractic patients.	"Welcome" American Chiropractic Association, http://www.acatoday.org/level2_css.cfm?T1ID=10&T2ID=20 (Accessed 4/10/15).	American Chiropractic Association 1701 Claredon Blvd. , Suite 200 Arlington, VA 22209 Phone: 703-276-8800 Fax: 703-243-2593 E-mail: memberinfo@acatoday.org www.acatoday.org
National/ Professional	Congress of Chiropractic State Associations	The Congress of Chiropractic State Associations was formed in the late 1960s and is a nonprofit organization consisting of state chiropractic associations. The mission of the congress is to provide an open, nonpartisan forum for the promotion and advancement of the chiropractic profession through service to member state associations.	"About COCSA" Congress of Chiropractic State Associations, http://www.cocsa.org/?page=A2 (Accessed 4/10/15).	Congress of Chiropractic State Associations 12531 East Meadow Drive Wichita, KS 67206 Phone: 316-613-3386 Fax: 316-633-4455 E-mail: info@cocsa.org www.cocsa.org

Type of Organization	Professional Association	Description	Citation	Contact Information
State/|Professional	Various State Associations	Each state has a chiropractic association that oversees the licensure of Doctors of Chiropractic within its jurisdiction. A complete list of state associations can be found on the Chiropractic Diplomatic Corps website.	"USA–State Associations" Chiropractic Diplomatic Corps, www.chiropracticdiplomatic.com/usa-assoc.html (Accessed 4/10/15).	n/a
National/ Academic	The Association of Chiropractic Colleges	Comprised of accredited chiropractic programs. Membership is available in the U.S. and around the world. Its mission is to enhance chiropractic education research and the profession. Each institution has a vote of the board of directors of the association.	"About ACC" The Association of Chiropractic Colleges, 2009, http://www.chirocolleges.org/about.html (Accessed 4/10/15).	Association of Chiropractic Colleges 4424 Montgomery Avenue, Suite 202 Bethesda, MD 20814 Phone: 800-284-1062 E-mail: Info@ChiroColleges.org www.chirocolleges.org
National	American Dental Association (ADA)	"Founded in 1859, the not-for-profit American Dental Association is the nation's largest dental association, representing more than 157,000 dentist members."	"About the ADA" American Dental Association, www.ada.org/en/about-the-ada/ (Accessed 4/10/15).	American Dental Association 211 East Chicago Ave. Chicago, IL 60611-2678 Phone: 312-440-2500 www.ada.org
National	Commission on Dental Accreditation (CODA)	"CODA's mission is to serve the oral health care needs of the public through the development and administration of standards that foster continuous quality improvement of dental and dental related educational programs."	"About Us" Commission on Dental Accreditation, www.ada.org/prof/ed/accred/commission/index.asp (Accessed 4/10/15).	American Dental Association Commission on Dental Accreditation 211 East Chicago Avenue, Suite 1900 Chicago, IL 60611 Phone: 312-440-4653 http://www.ada.org/en/coda
National	American Dental Hygienists' Association (ADHA)	"ADHA believes in helping dental hygienists achieve their full potential as they seek to improve the public's oral health" and provides professional support and educational programs.	"About ADHA" American Dental Hygienists' Association, www.adha.org/aboutadha/index.html (Accessed 4/10/15).	American Dental Hygienists' Association 444 North Michigan Avenue, Suite 3400 Chicago, IL 60611 Phone: 312-440-8900 E-mail: member.services@adha.net www.adha.org
National	Academy of General Dentistry (AGD)	"The Academy of General Dentistry (AGD) is a professional association of more than 38,000 general dentists dedicated to providing quality dental care and oral health education to the public...Founded in 1952, the AGD is the second largest dental association in the United States, and it is the only association that exclusively represents the needs and interests of general dentists."	"About the AGD" The Academy of General Dentistry, 2009, www.agd.org/about/ (Accessed 4/10/15).	Academy of General Dentistry 560 W. Lake St., Sixth Floor Chicago, IL 60661-6600 Telephone: 888-AGD-DENT (888-243-3368) Fax: 312-335-3443 E-mail: membership@agd.org www.agd.org

(continued)

Type of Organization	Professional Association	Description	Citation	Contact Information
National	American Association of Public Health Dentistry (AAPHD)	"Founded in 1937, the American Association of Public Health Dentistry (AAPHD) provides a focus for meeting the challenge to improve oral health. AAPHD membership is open to all individuals concerned with improving the oral health of the public."	"About the AAPHD..." American Association of Public Health Dentistry, 2009, www.aaphd.org/default.asp?page=about.htm (Accessed 4/10/15).	American Association of Public Health Dentistry National Office 3085 Stevenson Drive, Suite 200 Springfield, IL 62703 Phone: 217-529-6941 Fax: 217-529-9120 E-mail: info@aaphd.org www.aaphd.org
National	American Association of Endodontists (AAE)	"The American Association of Endodontists is dedicated to excellence and quality in the art and science of endodontics and to the highest standard of patient care. The Association inspires its members to pursue professional advancement and personal fulfillment through education, research, advocacy, leadership, communication and service."	"Mission and Goals" American Association of Endodontists, 2009, http://www.aae.org/about-aae/mission-and-goals/mission-and-goals.aspx (Accessed 4/10/15).	American Association of Endodontists 211 E. Chicago Ave., Suite 1100 Chicago, IL 60611-2691 Phone: 800-872-3636 Fax: 866-451-9020 E-mail: info@aae.org www.aae.org
National	American Academy of Oral and Maxillofacial Pathology (AAOMP)	"The Academy of Oral and Maxillofacial Pathology (AAOMP) represents the dental specialty that identifies and manages diseases affecting the oral and maxillofacial regions and investigates the causes, processes and effects of these diseases. Our clinical practitioners, researchers, educators and microscopic diagnosticians collaborate with other dental and medical professionals to advance oral health care."	"American Academy of Oral & Maxillofacial Pathology" AAOMP, www.aaomp.org/ (Accessed 4/10/15).	American Academy of Oral & Maxillofacial Pathology 214 North Hale Street Wheaton, IL 60187 Phone: 1-888-552-2667 Fax: 630-510-4501 E-mail: info@aaomp.com www.aaomp.org
National	American Academy of Oral and Maxillofacial Radiology (AAOMR)	The Mission of the Academy is to: "•Shape and advance the scientific base in OMR by fostering research •Improve quality of patient care •Improve access to services •Support existing and nurture new OMR residency programs •Promote an optimal socio-economic environment for OMR."	"Vision and Mission" The American Academy of Oral & Maxillofacial Radiology, www.aaomr.org/history.php (Accessed 4/10/15).	The American Academy of Oral and Maxillofacial Radiology P.O. Box 1010 Evans, GA 30809-1010 Phone: 706-721-2883 Fax: 502-852-1626 E-mail: exec-dir@aaomr.org www.aaomr.org

Type of Organization	Professional Association	Description	Citation	Contact Information
National	American Association of Oral and Maxillofacial Surgeons (AAOMS)	"The American Association of Oral and Maxillofacial Surgeons (AAOMS), the professional organization representing more than 9,000 oral and maxillofacial surgeons in the United States, supports its members' ability to practice their specialty through education, research, and advocacy. AAOMS members comply with rigorous continuing education requirements and submit to periodic office examinations, ensuring the public that all office procedures and personnel meet stringent national standard."	"About AAOMS" The American Association of Oral and Maxillofacial Surgeons, 2009, www.aaoms.org/about.php (Accessed 4/10/15).	American Association of Oral and Maxillofacial Surgeons 9700 West Bryn Mawr Avenue Rosemont, IL 60018-5701 Phone: 800-822-6637, 847-678-6200 Fax: 847-678-6286 www.aaoms.org
National	American Association of Orthodontists	"Founded in 1900, the American Association of Orthodontists (AAO) is the world's oldest and largest dental specialty organization. It represents more than 17,000 orthodontist members throughout the United States, Canada and abroad."	"What We Do" American Association of Orthodontists, https://www.aaoinfo.org/about/what-we-do (Accessed 4/10/15).	American Association of Orthodontists 401 North Lindbergh Boulevard St. Louis, MO 63141-7816 Phone: 314-993-1700 or 800-424-2841 Fax: 314-997-1745 E-mail: info@aaortho.org https://www.aaoinfo.org/about/what-we-do
National	American Academy of Pediatric Dentistry	"We are the membership organization representing the specialty of pediatric dentistry. The AAPD's 9,300 members serve as primary care and specialty providers for millions of children from infancy through adolescence; provide advanced, specialty-level care for infants, children, adolescents and patients with special health care needs; and are the primary contributors to professional education programs and scholarly works concerning children's dental care. The AAPD also represents general dentists who treat a significant number of children in their practices."	"President's Message" American Academy of Pediatric Dentistry, 2014, http://www.aapd.org/about/ (Accessed 4/10/15).	American Academy of Pediatric Dentistry 211 East Chicago Avenue, Suite 1600 Chicago, IL 60611-2637 Phone: 312-337-2169 Fax: 312-337-6329 www.aapd.org

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Type of Organization	Professional Association	Description	Citation	Contact Information
National	American Academy of Periodontology	"The American Academy of Periodontology (AAP) is an 8,400-member professional organization for periodontists - specialists in the prevention, diagnosis, and treatment of diseases affecting the gums and supporting structures of the teeth, and in the placement of dental implants...The Academy's purpose is to advance the periodontal and general health of the public and promote excellence in the practice of periodontics."	"About the American Academy of Periodontology" American Academy of Periodontology, 2009, http://www.perio.org/about-us (Accessed 4/10/15).	American Academy of Periodontology 737 N. Michigan Avenue, Suite 800 Chicago, IL 60611-6660 Phone: 312-787-5518 Fax: 312-787-3670 www.perio.org
National	American College of Prosthodontists	"Founded in 1970, the American College of Prosthodontists is an educational and scientific organization, a 501(c)(6), created to represent the needs and interests of prosthodontists within organized dentistry, and to the public, by providing a means for stimulating awareness and interest in the field of prosthodontics. The ACP's goal is to be the global resource for all aspects of the specialty."	"About ACP" 2014, http://www.gotoapro.org/about-acp/ (Accessed 4/10/15).	American College of Prosthodontists 211 E. Chicago Ave., Suite 1000 Chicago, IL 60611 Phone: 312-573-1260 Fax: 312-573-1257 E-mail: acp@prosthodontics.org http://www.gotoapro.org/
National	American Optometric Association (AOA)	"Founded in 1898, the AOA is a federation of state, student and armed forces optometric associations. Through these affiliations, the AOA serves members consisting of optometrists, students of optometry, paraoptometric assistants and technicians. Together, the AOA and its affiliates work to provide the public with quality vision and eye care."	"About the AOA" American Optometric Association, 2014 http://www.aoa.org/about-the-aoa?sso=yl (Accessed 4/10/15).	American Optometric Association 243 N. Lindbergh Blvd. St. Louis, MO 63141 Phone: 800-365-2219 www.aoa.org
National	American Board of Optometry	Created by the Joint Board Certification Project Team to "develop and implement the framework for board certification and maintenance of certification."	"American Optometric Association Approves Optometric Board Certification At Annual Meeting" American Optometric Association, June 27, 2009, http://kentucky.aoa.org/x12978.xml (Accessed 4/10/15).	American Board of Optometry 243 N. Lindbergh Blvd., Suite 312 St. Louis, MO 63141 Phone: 314-983-4226 americanboardofoptometry.org
National	Association of Regulatory Boards of Optometry (ARBO)	"The mission of the Association of Regulatory Boards of Optometry is to represent and assist member licensing agencies in regulating the practice of optometry for the public welfare."	"ABRO" Association of Regulatory Boards of Optometry, http://www.arbo.org/ (Accessed 4/10/15).	Association of Regulatory Boards of Optometry 200 South College St., Suite 2030 Charlotte, NC 28202 Phone: 704-970-2710 Fax: 704-970-2720 E-mail: arbo@arbo.org www.arbo.org

Type of Organization	Professional Association	Description	Citation	Contact Information
National	Association of Schools and Colleges of Optometry (ASCO)	"The Association of Schools and Colleges of Optometry (ASCO) is the academic leadership organization committed to promoting, advancing and achieving excellence in optometric education. Since 1941, ASCO has achieved this vision by representing the interests of institutions of optometric education, enhancing the efforts of these institutions as they prepare highly qualified graduates for entrance into the profession of optometry and serving the public's eye and vision needs."	"About ASCO" Association of Schools and Colleges of Optometry, http://www.opted.org/about-asco (Accessed 4/10/15).	Association of Schools and Colleges of Optometry 6110 Executive Blvd, Suite 420 Rockville, MD 20852 Phone: 301-231-5944 Fax: 301-770-1828 www.opted.org
National	Council on Endorsed Licensure Mobility for Optometrists (CELMO)	"The Council on Endorsed Licensure Mobility for Optometrists (CELMO) was created to assist ARBO's member optometry boards in reviewing applications for licensure from established practitioners in other jurisdictions. The goal of the CELMO program is to provide a license mobility vehicle by which the optometry licensing boards can address the difficult task of how to deal with the issue of licensure by endorsement in a uniform and consistent manner."	"CELMO Program Overview" Council on Endorsed Licensure Mobility for Optometrists, www.arbo.org/index.php?action=celmo (Accessed 4/10/15).	Association of Regulatory Boards of Optometry 200 South College St., Suite 2030 Charlotte, NC 28202 Phone: 704-970-2710 Fax: 704-970-2720 E-mail: arbo@arbo.org www.arbo.org/index.php?action=celmo
National	Council on Optometric Practitioner Education (COPE)	COPE is a committee of the ARBO and "was created by ARBO to accredit continuing education on behalf of optometric licensing boards."	"COPE Counsel on Optometric Practitioner Education" Association of Regulatory Boards of Optometry, http://www.arbo.org/cope_info.php (Accessed 4/10/15).	Association of Regulatory Boards of Optometry 200 South College St. Suite 2030 Charlotte, NC 28202 Phone: 704-970-2710 Fax: 704-970-2720 E-mail: arbo@arbo.org http://www.arbo.org/cope_info.php
National	National Board of Examiners in Optometry (NBEO)	"The NBEO is an independent, non-governmental, non-profit organization whose mission is to protect the public by accurately assessing the competence of practicing optometrists."	"Welcome to the NBEO website" National Board of Examiners in Optometry, 2008, http://www.optometry.org/president.cfm (Accessed 4/10/15).	Association of Regulatory Boards of Optometry 200 South College St. Suite 2030 Charlotte, NC 28202 Phone: 704-970-2710 Fax: 704-970-2720 E-mail: arbo@arbo.org www.optometry.org

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Type of Organization	Professional Association	Description	Citation	Contact Information
National	American Academy of Optometry (AAO)	"Founded in 1922, the American Academy of Optometry is committed to promoting the art and science of vision care through lifelong learning."	"About Us" American Academy of Optometry, 2014, http://www.aaopt.org/about (Accessed 4/10/15).	The American Academy of Optometry 2909 Fairgreen Street Orlando, FL 32803 Phone: 321-710-EYES (3937) Fax: 407-893-9890 E-mail: aaoptom@aaoptom.org www.aaopt.org/
National	American Optometric Student Association (AOSA)	"The AOSA represents over 5,700 students attending the 22 schools and colleges of optometry throughout the U.S., Canada, and Puerto Rico" and is "committed to promoting the optometric profession, enhancing the education and welfare of optometry students, as well as enhancing the vision and ocular health of the public."	"About the AOSA" Tyson Allard, AOSA, 2009, www.theaosa.org/letter-from-president.asp (Accessed October 23, 2009).	American Optometric Student Association 243 N. Lindbergh Blvd. St. Louis, MO 63141 Phone: 314-983-4231 www.theaosa.org/
National	American Podiatric Medical Association (APMA)	The largest association of podiatric physicians, it is dedicated to increasing awareness of foot and ankle health through education and legislative action.	"What is a Podiatrist?" American Podiatric Medical Association, American Podiatric Medical Association, 2015, www.apma.org/MainMenu/AboutPodiatry.aspx (Accessed 4/10/15).	American Podiatric Medical Association 9312 Old Georgetown Road Bethesda, MD 20814-1621 Phone: 301-571-9200 www.apmle.com
National	The National Board of Podiatric Medical Examiners	"The National Board of Podiatric Medical Examiners (NBPME) is a nonprofit corporation established in Missouri in 1956...The mission of the corporation is to develop and administer examinations of such high quality that the various legal agencies governing the practice of podiatric medicine may choose to license those who have successfully completed such examinations for practice in their jurisdictions without further examination."	"About Us" National Board of Podiatric Medical Examiners, American Podiatric Medical Licensing Examination, 2014, http://apmle.com/about-us (Accessed 4/10/15).	American Podiatric Medical Licensing Examination P.O. Box 510 Bellefonte, PA 16823 Phone: 814-357-0487 E-mail: NBPMEOfc@aol.com www.apmle.com/
National	Council on Podiatric Medical Education (CPME)	CPME, empowered through the APMA, is an "autonomous accrediting agency for podiatric medical education." The CPME "has final authority for: [t]he accreditation of colleges of podiatric medicine, the approval of fellowships and residency programs, and sponsors of continuing education" and "[t]he recognition of specialty certifying boards for podiatric medical practice."	"About CPME" American Podiatric Medical Association, Inc., 2015, http://www.cpme.org/index.cfm?&RDtoken=48868&userID= (Accessed 4/10/15).	Council on Podiatric Medical Education 9312 Old Georgetown Road Bethesda, MD 20814-1621 Phone: 301-581-9200 http://www.cpme.org/index.cfm

Type of Organization	Professional Association	Description	Citation	Contact Information
National	Council for Higher Education Accreditation (CHEA)	"A national advocate and institutional voice for self-regulation of academic quality through accreditation, CHEA is an association of 3,000 degree-granting colleges and universities and recognizes 60 institutional and programmatic accrediting organizations."	"Counsel for Higher Education Accreditation" 2012, http://www.chea.org/pdf/chea-at-a-glance_2012.pdf (Accessed 4/10/15).	Council for Higher Education Accreditation One Dupont Circle NW, Suite 510 Washington, DC 20036-1135 Phone: 202-955-6126 Fax: 202-955-6129 E-mail: chea@chea.org www.chea.org
National	American Association of Colleges of Podiatric Medicine (AACPM)	AACPM is a "national educational organization that represents the nine accredited U.S. colleges of podiatric medicine as well as over 200 hospitals and organizations that conduct graduate training in podiatric medicine. The Association serves as a national forum for the exchange of ideas, issues information and concerns relating to podiatric medical education."	"About AACPM" American Association of Colleges of Podiatric Medicine, 2001, www.aacpm.org/html/about/index.asp (Accessed 4/10/15).	American Association of Colleges of Podiatric Medicine 15850 Crabbs Branch Way, Suite 320 Rockville, MD 20855 Phone: 301-948-9760 E-mail: podinfo@aacpm.org www.aacpm.org/html/about/index.asp
National	The American Psychological Association (APA)	The APA is one of the largest associations representing psychologists across the world. The association is both professional and scientific-based with approximately 130,000 members.	"About APA" American Psychological Association, www.apa.org/about/ (Accessed 4/10/15).	American Psychological Association 750 First Street, NE Washington, DC 20002-4242 Phone: 800-374-2721, 202-336-5500 www.apa.org
National	Association for Psychological Science	The Association for Psychological Science was founded in 1988 and has approximately 26,000 members. The organization focuses "on the advancement of scientific psychology and its representation at the national and international level."	"Directory of National Psychology Associations" American Psychological Association, April 2014, http://www.apa.org/international/networks/organizations/national-orgs.aspx (Accessed 4/10/15); "About APS" Association for Psychological Science, http://www.psychologicalscience.org/index.php/about (Accessed 4/10/15).	Association for Psychological Science 1133 15th Street, NW, Suite 1000 Washington, DC 20005 Phone: 202-293-9300 Fax: 202-293-9350 http://www.psychologicalscience.org/
State	Association of State and Provincial Psychology Boards	The Association of State and Provincial Psychology Boards is the association for psychology licensing boards in the U.S. and Canada. The organization founded the Examination for Professional Practice is Psychology, which is used for certification and licensure. The Association also offers mobility programs to assist with licensure for psychologists who are licensed in multiple states.	"State, Provincial & Territorial Psychological Association Directory" American Psychological Association, www.apa.org/practice/refer.html (Accessed 4/10/15).	Association of State and Provincial Psychology Boards P.O. Box 3079 Peachtree City, GA 30269 Phone: 334-832-4580 Fax: 678-216-1176 Email: asppb@asppb.org www.asppb.org

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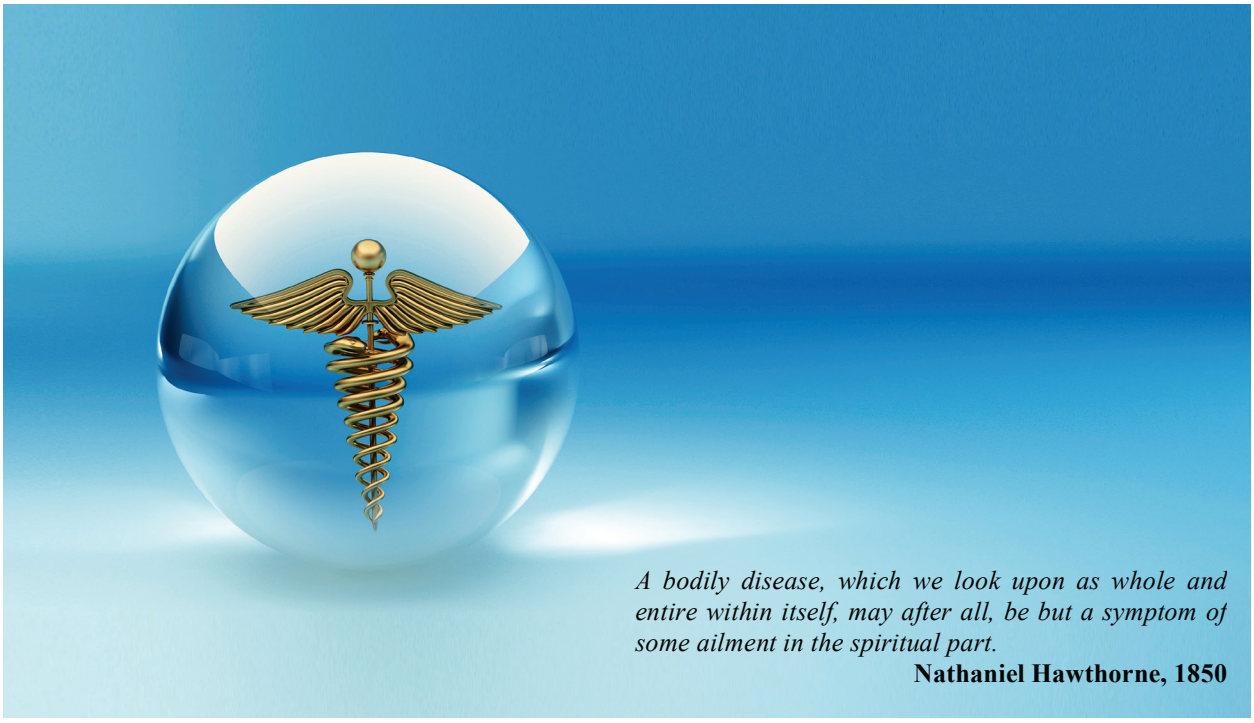
Type of Organization	Professional Association	Description	Citation	Contact Information
National	American Academy of Counseling Psychology	AACoP "advances Counseling Psychology as a science and practice and promotes ABPP Certification in the Specialty of Counseling Psychology."	"American Academy for Counseling Psychology" www.aacop.us (Accessed 4/10/15).	American Academy of Counseling Psychology E-mail: ars1pa1@gmail.com www.aacop.us
National	American Academy of Child & Adolescent Neuro= psychology	"The mission of AACAP is to promote the healthy development of children, adolescents, and families through advocacy, education, and research, and to meet the professional needs of child and adolescent psychiatrists throughout their careers."	"American Academy of Child & Adolescent Neuropsychology" www.aacap.org/ (Accessed 4/10/15).	The American Academy of Child and Adolescent Psychiatry 3615 Wisconsin Avenue, NW Washington, D.C. 20016-3007 Phone: 202-966-7300 Fax: 202-966-2891 www.aacpsy.org
National	National Alliance on Mental Illness	Founded in 1979, NAMI is "an association of hundreds of local affiliates, state organizations and volunteers who work...to raise awareness and provide support and education that was not previously available to those in need."	"About NAMI" National Alliance on Mental Illness, http://www.nami.org/ About-NAMI (Accessed 4/10/15).	National Alliance on Mental Illness 3803 N. Fairfax Drive, Suite 100 Arlington, VA 22203 Phone: 703-524-7600 Fax: 703-524-9094 www.nami.org
National	Substance Abuse and Mental Health Services Administration	"The Substance Abuse and Mental Health Services Administration (SAMHSA) is the agency within the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities."	"Substance Abuse and Mental Health Services Administration" www.samhsa.gov/ (Accessed 4/10/15).	Substance Abuse and Mental Health Services Administration 1 Choke Cherry Rd. Rockville, MD 20857 Phone: 877-SAMHSA-7 www.samhsa.gov

Chapter 11

Alternative Medicine Practices



A bodily disease, which we look upon as whole and entire within itself, may after all, be but a symptom of some ailment in the spiritual part.

Nathaniel Hawthorne, 1850

KEY TERMS

Acupuncture
Alternative Medicine
Aromatherapy
Ayurveda
Biofield Therapies
Cognitive-Behavior Therapy
Complementary and Alternative Medicine (CAM)
Complementary Medicine
Integrative Medicine
Massage Therapy
aturopathic Physicians Licensing Examination (NPLEX)
Policy Rider
Qi
Qi Gong
Reiki
Therapeutic Touch

Key Concept	Definition	Citation	Concept Mentioned on Page #
CAM Practice Types	(1) whole medical systems, (2) mind-body medicine, (3) biologically based practices, (4) manipulative and body-based practices, and (5) energy medicine	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	648
Whole Medical Systems	It fully developed in both theory and practice, either independent of, or complementary to, allopathic and osteopathic medicine. The development of whole medical systems independent of mainstream, Western medicine can usually be attributed to geographic, cultural, and, often, tradition.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	648
Traditional Whole Medical Systems	Several commonly known Eastern medical systems include Traditional Chinese Medicine and Ayurvedic Medicine; others have been developed by African, Middle Eastern, Central American, South American, and Native American cultures.	What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2; "Whole Medical Systems," Revolution Health Group, LLC, 2006, http://www.revolutionhealth.com/ healthy-living/natural-health/natural-health-101/complementary-alternative-medicine/whole-medical-systems. (Accessed 12/09/09).	649
Traditional Chinese Medicine	The modern name for the ancient medical practices of China, built around the concept of balanced vital energy.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 4.	649
Western Whole Medical Systems	Naturopathic and homeopathic medicine	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	650
Expressive/ Creative Art Therapists	Dance, art, music, and other forms of therapy.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	651
Mind-Body Medicine	Employs techniques that strengthen mental ability to impact physical health.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	651
Biologically Based Practices	Employs natural sources, such as herbs, vitamins, and food, in various products, including dietary supplements and herbal remedies. The efficacy of such products does not rely on scientific evidence.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	651
Manipulative and Body-Based Practices	Involves controlled or trained movement of one or more parts of the body.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	652
Energy Therapies	It implements energy fields and fall under one of two categories: biofield therapies and bioelectromagnetic-based therapies.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/ campractices/01.html (Accessed 10/16/09), p. 2.	652

Key Concept	Definition	Citation	Concept Mentioned on Page #
Homeopathic Medicine	A CAM whole medical system centered on the belief that "like cures like."	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/campractices/ 01.html (Accessed 10/16/09), p. 3.	653
Naturopathic Medicine	A CAM whole medical system centered on the belief that the body's healing power is responsible for sustaining, maintaining, and restoring health.	"What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihsenior health.gov/cam/campractices/01.html (Accessed 10/16/09), p. 4.	655

DESCRIPTION AND SCOPE

Healthcare services that fall outside the scope of conventional allopathic and osteopathic medical practice belong to a genre commonly recognized as *alternative medicine*.[1] However, these medical practices are recognized by the National Institutes of Health as *complementary and alternative medicine (CAM)*, an important distinction which is not as commonly understood.[2]

SCOPE

Alternative medicine serves as a replacement for conventional services, while *complementary medicine* is utilized in conjunction with traditional practice.[3] *Integrative* (or *integrated*) *medicine* applies aspects of conventional medicine and CAM that have been shown to be safe and effective.[4]

EDUCATION AND TRAINING

The education and training requirements may vary tremendously for the different types of CAM. For example, 48 states have statutory requirements for dietetics care while none license Ayurveda.[5]

PRACTICE TYPES

There are several major types of CAM: whole medical systems, mind-body medicine, biologically based practices, manipulative and body-based practices, and energy medicine.[6] Each of these categories embodies a variety of techniques and services, with some more commonly adopted and implemented than others.[7]

Whole Medical Systems

Whole medical systems are fully developed in both theory and practice, independent of allopathic and osteopathic medicine.[8] The independent development of whole medical systems in the US largely occurred because of: (1) a lack of widespread public acceptance of CAM

1 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 1.
2 Ibid.
3 Ibid.
4 Ibid.
5 "IBISWorld Industry Reprot 62139b: Alternative Healthcare Providers in the US" By Dmitry Diment, IBISWorld, November 2014, p.26.
6 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 2.
7 Ibid.
8 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 2.

therapies due to the lack of scientific rigor in studying CAM techniques and (2) the success of conventional medicine in treating many acute care conditions.[9]

Traditional Whole Medical Systems

Two commonly known whole medical systems developed out of Eastern traditions: Ayurvedic medicine and traditional Chinese medicine.[10] Other forms of whole medical systems have been developed by African, Middle Eastern, Central American, South American, and Native American cultures.[11]

Ayurveda

Ayurveda is an Indian (Asian) medical system that dates back 5,000 years.[12] Ayurvedic medicine implements diet and herbal therapies, as well as channeling of the mind, body, and spirit to prevent and treat disease.[13] Ayurvedic medicine has become increasingly popular among Westerners, particularly with the recent growth in medical tourism. Medical tourism has caught the attention of patients and insurers alike, because outsourcing care could potentially result in 80% savings in healthcare expenditures.[14] From 2008 to 2014, the number of Americans seeking medical care abroad grew from 540,000[15] to 1,200,000.[16] India has offered modern medical treatment for the lowest rates seen in the medical tourism market,[17] and is currently growing at 30% per year, in part due to the increase in American medical tourists.[18]

Traditional Chinese Medicine (TCM)

Traditional Chinese medicine (TCM) is the modern name for the ancient medical practices developed in China and built around the concept of balanced vital energy. According to TCM tradition, vital energy, called *qi* (pronounced "chyee"), circulates throughout the body to regulate an individual's spiritual, emotional, mental, and physical states and is influenced by negative and positive energies, yin and yang.[19] TCM theorizes that disease is a consequence of the disruption in the flow of virtual energy and an imbalance of these opposing energies. Disease is treated by herbal and nutritional therapies, physical exercise, meditation, acupuncture, and massage.[20]

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9 "White House Commission on Complementary and Alternative Medicine: Final Report" Secretary of Health and Human Services, March 2002, p. 13.
10 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 2.
11 "Whole Medical Systems" Revolution Health Group, LLC, 2006, http://www.revolutionhealth.com/healthy-living/natural-health/natural-health-101/complementary-alternative-medicine/whole-medical-systems. (Accessed 12/09/09).
12 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 3.
13 Ibid.
14 "Insurers Investigate Medical Tourism to Save Money on Care" By Karen Pallarito, Business Insurance, Vol. 40, No. 50 (December 11, 2006), p. 17-18.
15 "Medical Tourism: Update and Implications" By Paul Keckley, Deloitte, 2009, p. 9.
16 "Medical Tourism Statistics and Facts" Patients Beyond Borders, 2014, http://www.patientsbeyondborders.com/medicaltourism statisticsfacts (Accessed 4/8/15).
17 "New Report Evaluates the Asian Medical Tourism Industry with Its Growth Drivers and Trends with..." Businesswire, May 2, 2008, http://www.allbusiness.com/health-care/health-care-facilities-hospitals/10185009-1.html (Accessed 10/20/09).
18 "Best Hospitals and Surgery in India" Patients Beyond Borders, 8/19/2014, http://www.patientsbeyondborders.com/india (Accessed 4/9/15)
19 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 4.
20 Ibid.

One area of TCM that emphasizes the enhancement of virtual energy flow is *Qi gong*, a technique that combines meditation, regulated breathing techniques, and physical motion to improve blood and qi circulation and strengthen immunity.[21]

An area of TCM that has evolved during the last two millennia is *acupuncture*.[22] As it is implemented in American practice, acupuncture incorporates Chinese, Japanese, Korean, and other Eastern traditions in modernized, technical, anatomic stimulation of various corporal points.[23] Further solidifying its place in Western medicine, acupunctural procedures have been assigned a series of Current Procedural Terminology codes (97810-97814).[24]

The National Certification Commission for Acupuncture and Oriental Medicine grants certification in Oriental medicine, acupuncture, and Chinese herbology.[25] Those seeking certification must complete formal education, an apprenticeship, or both.[26] Regardless of the education and training path pursued, all candidates must submit an application, as well as successfully complete examinations on the foundations of Oriental medicine, acupuncture with point location, and biomedicine.[27] Additionally, they must provide proof that they have completed a clean needle technique course.[28] Those who choose to pursue formal education must graduate from a program approved by the Accreditation Commission for Acupuncture and Oriental Medicine and must have proof of a minimum number of hours studying: (1) Oriental medicine and acupuncture theory; (2) biomedicine; and (3) counseling, communications, ethics, and practice management; as well as a completion of acupuncture clinical practicum.[29] Should the practitioner choose to pursue an apprenticeship, he or she must provide evidence of 4,000 contact hours through the program, obtain proficiency and experience in all aspects of the trade (through to diagnosis and treatment) after the first year of the program, and be under the supervision of a "qualified preceptor."[30] Qualified preceptors must possess federal or state approval or have treated 500 patients prior to assuming the role of preceptor.[31]

Western Whole Medical Systems

Whole medical systems that stem from conventional Western medicine include naturopathic and homeopathic medicine.[32] These are two of the most commonly employed whole medical systems and will be discussed separately.

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21 Ibid.
22 Ibid, p. 3.
23 Ibid, p. 3.
24 "Current Procedural Coding Expert" American Medical Association, 2009, Ingenix, p. 446-447
25 "2015 NCCAOM Certification Handbook" National Certification Commission for Acupuncture and Oriental Medicine, 2015, http://www.nccaom.org/wp-content/uploads/pdf/Certification%20Handbook.pdf (Accessed 4/9/15), p. 1.
26 "2009 Candidate Handbook & Application Form" National Certification Commission for Acupuncture and Oriental Medicine, 2009, http://www. nccaom.org/handbooks/HB2009v1.pdf (Accessed 10/19/09), p. 2.
27 Ibid.
28 Ibid.
29 "2015 NCCAOM Certification Handbook" National Certification Commission for Acupuncture and Oriental Medicine, 2015, http://www.nccaom.org/wp-content/uploads/pdf/Certification%20Handbook.pdf (Accessed 4/9/15), p. 22.
30 "2009 Candidate Handbook & Application Form" National Certification Commission for Acupuncture and Oriental Medicine, 2009, http://www. nccaom.org/handbooks/HB2009v1.pdf (Accessed 10/19/09), p. 6.
31 Ibid.
32 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 2.

Mind-Body Medicine

Mind-body medicine employs techniques that strengthen mental ability to affect physical health. Mind-body CAM techniques include meditation and prayer, mental healing, aromatherapy, and expressive/creative arts therapies.[33] Some techniques, such as support groups and cognitive-behavioral therapy, which were once considered CAM, are becoming a larger part of conventional practice.[34]

Aromatherapy

Aromatherapy involves the use of flower, herb, and tree extracts to enhance and maintain health and wellness.[35] Currently, no state licensure requirements exist for aromatherapy, however, the National Association for Holistic Aromatherapy recognizes that most aroma therapists are trained in another profession for which licensure requirements do exist (for example, licensed massage therapists, Registered Nurses, licensed acupuncturists, medical doctors, and naturopathic physicians).[36] As such, these professionals must be licensed in their primary profession in order to employ aromatherapy in their practice.

Cognitive-Behavioral Theory (CBT)

Cognitive-behavioral therapy (CBT) is a type of psychotherapy that centers around the influence of thought on feelings and actions.[37] A cognitive-behavioral therapist focuses on rational emotive behavior therapy, rational behavior therapy, rational living therapy, cognitive therapy, and dialective behavior therapy.[38] In order to be qualified for certification through the National Association of Cognitive-Behavioral Therapists (NACBT), candidates must achieve a master's or doctoral degree in psychology, counseling, social work, psychiatry, or a related field; complete ten-years of verified experience in the clinical field of cognitive-behavioral therapy; provide three letters of recommendation; and complete of a NACBT-approved primary certification program.[39]

Biologically-Based Practices

Biologically-based CAM therapies employ natural sources, such as herbs, vitamins, and food in various products, including dietary supplements and herbal remedies.[40] The efficacy of such products does not rely on traditional scientific-based evidence.[41]

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33 Ibid.
34 Ibid.
35 Ibid, p. 3.
36 "Exploring Aromatherapy" National Association for Holistic Aromatherapy, https://www.naha.org/explore-aromatherapy/regulations/ (Accessed 4/9/15).
37 "Cognitive-Behavioral Therapy" The National Association of Cognitive-Behavioral Therapists, April 5, 2007, http://www.nacbt.org/whatiscbt.htm (Accessed 10/19/09).
38 Ibid.
39 "CBT Certifications," National Association of Cognitive-Behavioral Therapist, 2014, http://www.nacbt.org/certifications.aspx (Accessed 4/9/15)
40 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 2.
41 Ibid.

Manipulative and Body-Based Practices

Manipulative and body-based CAM practices involve controlled or trained movement of one or more parts of the body.[42] Chiropractic and osteopathic manipulation therapies are recognized by both the National Center for Complementary and Alternative Medicine (NCCAM) and the American Medical Association as CAM services.[43] However, due to the broad scope and overall nature of services provided within chiropractic and osteopathic practice, professionals in these fields are classified as allied health professionals and physicians, respectively, within the context of the taxonomy employed within this Guide (see *Introduction*).

Massage Therapy

Massage therapists enhance muscle and tissue function by manipulating tissues while promoting relaxation.[44] According to the American Massage Therapy Association, most states regulate massage therapy, requiring licensure, registration, certification, or a combination of these in order for therapists to practice.[45] Licensure is considered the strictest form of regulation, and it is legally impermissible for therapists to practice without licensure should their state require it. The National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) requires that candidates for certification complete 750 hours of educational training, complete 250 hours of hands-on experience, and pass the NCBTMB standardized examination.[46]

Energy Medicine

Energy therapies implement energy fields and fall under one of two categories: biofield therapies and bioelectromagnetic-based therapies.[47] *Biofield therapies* involve the application of pressure and manipulation by placing the hands in or through energy fields that are believed to surround the human body, enter the human body, or both. Such therapies include qi gong (discussed in *Traditional Chinese Medicine [TCM])*, Reiki, and therapeutic touch.[48]

Reiki is based on a Japanese belief that physical healing results from spiritual healing, which is procured by spiritual energies that channel through the Reiki practitioner.[49]

Therapeutic touch derives from the concept that a therapist's therapeutic forces can promote patient recovery as they pass their hands over their patients, identifying and rectifying any energy imbalances.[50]

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42 Ibid.
43 "Health Care Careers Directory 2009-2010" The American Medical Association, 2009, http://www.ama-assn.org/ama1/pub/upload/mm/40/camt02-chiropract.pdf (Accessed 10/19/09); "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 1-2.
44 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 4.
45 "Industry Fact Sheet," American Massage Therapy Association, 2015, http://www.amtamassage.org/infocenter/economic_industry-fact-sheet.html?src=navdropdown (Accessed 4/9/15).
46 "Board Certification," National Certification Board for Therapeutic Message and Bodywork, 2015, http://www.ncbtmb.org/board-certification (Accessed 4/9/2015).
47 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 2.
48 Ibid.
49 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 4.
50 Ibid.

INDUSTRY TRENDS

A reported $12.18 billion was spent on CAM care in 2014, up from $10.45 billion in 2009.[51] In 2012, 33.2% of all adults had received CAM therapy in some capacity during the past twelve months, up from 32.3% in 2002 but down from 35.5% in 2007.[52] The five most commonly used CAM therapies among U.S. adults are: natural products (17.% of adults); deep breathing (10.9% of adults); yoga, tai chi, and qi gong (10.1% of adults); chiropractic and osteopathic CAM procedures (8.4% of adults); and meditation (8.0% of adults).[53]

> This industry provides health services…such as medication, yoga, and massage…[has grown into a] $12.2 billion industry.
>
> ***Dmitry Diment, November 2014.***

The five diseases and conditions in adults that are most commonly treated using CAM techniques are: back pain (17.1%); neck pain (5.9%); joint pain (5.2%); arthritis (3.5%); and, anxiety (2.8%).[54]

HOMEOPATHIC MEDICINE

DESCRIPTION AND SCOPE

Homeopathic medicine is a CAM whole medical system centered on the belief that "like cures like."[55] In other words, miniscule, diluted medicinal remedies are prepared from substances that in high concentrations would actually induce the symptoms for which the patient is seeking care.[56] The practice is rooted in nineteenth-century European medicine.[57]

Scope

Two principles serve as the foundation for homeopathy: (1) the "principle of similar," and (2) the "principle of dilutions."[58] According to the principle of similars, conditions and diseases can be

51 "IBISWorld Industry Reprot 62139b: Alternative Healthcare Providers in the US" By Dmitry Diment, IBISWorld, November 2014, p. 33.
52 "Trends in Use of Complementary Health Approaches Among Adults: United States, 2002-2012" By Tainya Clark et al, National Heatlh Statistics Reports, No. 79, U.S. Department of Health and Human Services, 2/10/2015, p. 11.
53 Ibid, p. 10.
54 "The Use of Complementary and Alternative Medicine in the United States" National Center for Complementary and Alternative Medicine, 2009, http://nccam.nih.gov/news/camstats/2007/camsurvey_fs1.htm (Accessed 10/19/09), p. 3.
55 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/ campractices/ 01.html (Accessed 10/16/09), p. 3.
56 Ibid.
57 "Homeopathy: An Introduction" The National Center for Complementary and Alternative Medicine, October 13, 2009, http://nccam.nih.gov/health/ homeopathy/#top (Accessed 10/19/09).
58 "Homeopathy: An Introduction" The National Center for Complementary and Alternative Medicine, October 13, 2009, http://nccam.nih.gov/health/ homeopathy/#top (Accessed 10/19/09).

treated by using substances that would cause the observed symptoms in otherwise healthy patients.[59] The principle of dilution, also known as the "law of minimum dose," claims that the lower the dose, the more effective the therapy will be.[60]

Homeopathic practitioners consistently take genetic and individual health, as well as physical, emotional, and mental symptoms, into consideration when providing care.[61] As such, treatments are refined to meet the needs of each patient.[62] Commonly employed remedy substances include lactros, sucrose, the stinging nettle plant, and crushed bees.[63]

Homeopathy is used to treat a variety of conditions and diseases, including asthma, fevers, insomnia, coughs,[64] allergies, chronic fatigue, depression, digestive conditions, ear infections, migraines, and skin rashes.[65]

Education and Training

In order to qualify to take the Council for Homeopathic Certification (CHC) examinations, candidates must provide proof of training by way of attendance certificates or transcripts.[66] Also, they must provide proof of training in anatomy and physiology, as well as 250 hours of supervised clinical training.[67] Should they qualify, candidates must first pass a theoretical exam and then pass a practical exam in order to obtain a Certification in Classical Homeopathy.[68] Homeopathic certification also can be obtained from other organizations, including the diplomate of the homeopathic academy of naturopathic physicians through the Homeopathic Academy of Naturopathic Physicians, diplomate of homeotherapeutics through the American Board of Homeotherapeutics, and registered with the society of homeopaths through the Society of Homeopaths.[69]

Homeopathic licensure is only available to allopathic and osteopathic physicians in three states (Connecticut, Arizona, and Nevada).[70] In states that license naturopathic physicians, homeopathy may be factored into their scope of practice.[71]

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59 "The Economist Explains Why Homeopathy is Nonsense" The Economist, 4/1/2014, http://www.economist.com/blogs/economist-explains/2014/04/economist-explains (Accessed 4/9/15).
60 "Homeopathy: An Introduction" The National Center for Complementary and Alternative Medicine, October 13, 2009, http://nccam.nih.gov/health/ homeopathy/#top (Accessed 10/19/09), p. 2.
61 Ibid.
62 Ibid.
63 "The Economist Explains Why Homeopathy is Nonsense" The Economist, 4/1/2014, http://www.economist.com/blogs/economist-explains/2014/04/economist-explains (Accessed 4/9/15).
64 Ibid.
65 "Homeopathy: An Introduction" The National Center for Complementary and Alternative Medicine, October 13, 2009, http://nccam.nih.gov/health/ homeopathy/#top (Accessed 10/19/09), p. 2.
66 "About Certification" The Council for Homeopathic Certification, 2009, http://www.homeopathicdirectory.com/index.php?option=com_content& view=article&id=73&Itemid=63 (Accessed 10/19/09).
67 "Prerequisites" Council for Homeopathic Certification, 2015, http://www.homeopathicdirectory.com/index.php?option=com_content&view=article&id=69&Itemid=110 (Accessed 4/9/15).
68 "About Certification" The Council for Homeopathic Certification, 2009, http://www.homeopathicdirectory.com/index.php?option=com_content& view=article&id=73&Itemid=63 (Accessed 10/19/09).
69 "Credentials" The Council for Homeopathic Certification, 2009, http://www.homeopathicdirectory.com/index.php?option=com_content& view=article&id=53&Itemid=69 (Accessed 10/19/09).
70 "Certification v. Licensure" The Council for Homeopathic Certification, 2009, http://www.homeopathicdirectory.com/index.php?option=com_content &view=article&id=47&Itemid=99 (Accessed 10/19/09).
71 Ibid.

INDUSTRY TRENDS

Estimates for the size of the US homeopathic medicine market vary from $382.7 million[72] to $3 billion.[73] The percentage of the US adult population receiving treatment from homeopathic providers has grown to 2.9% in 2013, up from 2.0% in 2008.[74] Further, the revenue generated by homeopathic care practices is projected to increase 4.9% per year from 2014 to 2018.[75]

> In 2013, an estimated 2.9% of the adult population in the United States were treated using homeopathy.
>
> ***Anna Son, October 2013.***

NATUROPATHIC MEDICINE

DESCRIPTION AND SCOPE

Naturopathic medicine, known as naturopathy, is a CAM whole medical system centered on the belief that the body's healing power is responsible for sustaining, maintaining, and restoring health.[76] Like homeopathic medicine,[77] naturopathy emerged from eighteenths and nineteenth-century German medicine.[78]

Scope

The framework for the practice of naturopathy is comprised of six underlying principles:[79]

(1) "Promote the healing power of nature;
(2) First do no harm;
(3) Treat the whole person;
(4) Treat the cause;
(5) Prevention is the best cure; and
(6) The physician is a teacher."

Practitioners may deliver naturopathic treatments, such as hydrotherapy or manipulation, in their offices; they also provide services to help patients with diet, vitamins, minerals, and other dietary

72 "IBISWorld Industry Report OD4951: Homeopaths in the US" By Anna Son, IBSWorld, October 2013, p. 28.
73 "The Economist Explains Why Homeopathy is Nonsense" The Economist, 4/1/2014, http://www.economist.com/blogs/economist-explains/2014/04/economist-explains (Accessed 4/9/15).
74 "IBISWorld Industry Report OD4951: Homeopaths in the US" By Anna Son, IBSWorld, October 2013, p. 5.
75 Ibid.
76 "What is CAM?" National Center for Complementary and Alternative Medicine, December 4, 2008, http://nihseniorhealth.gov/cam/campractices/01.html (Accessed 10/16/09), p. 4.
77 "The Economist Explains Why Homeopathy is Nonsense" The Economist, 4/1/2014, http://www.economist.com/blogs/economist-explains/2014/04/economist-explains (Accessed 4/9/15).
78 "An Introduction to Naturopathy" National Center for Complementary and Alternative Medicine, April 2007, p. 1.
79 Ibid, p. 3.

supplements; herbal medical treatments; counseling in lifestyle improvements; homeopathy; manual and body-based therapies; exercise therapies; and mind-based therapies.[80]

Education and Training

Naturopathic physicians, traditional naturopaths, and conventional providers trained in naturopathy all have different education and training requirements.[81] Naturopathic physicians (doctors of naturopathic medicine) and doctors of naturopathy are regulated in seventeen states (Alaska, Arizona, California, Colorado, Connecticut, Hawaii, Kansas, Maine, Maryland, Minnesota, Montana, New Hampshire, North Dakota, Oregon, Utah, Vermont, and Washington), as well as in the District of Columbia and the U.S. territories of Puerto Rico and the Virgin Islands.[82] Prerequisites for pursuing licensure in these states and territories include completion of a four-year program through a naturopathic medical school, as well as the successful completion of a thorough post-doctoral examination through the *Naturopathic Physicians Licensing Examination Board* and the North American Board of Naturopathic Examiners.[83] In order to maintain licensure, naturopathic physicians also are required to fulfill continuing medical education requirements.[84]

Training as a traditional naturopath is comprised of in-person coursework, online training, correspondence courses, or a combination of these.[85] Training programs vary in length and are not accredited by a governing agency approved by the U.S. Department of Education.[86] Finally, conventional healthcare professionals (for example, doctors of medicine and osteopathy, nurses, and dentists) may be trained in naturopathic or other holistic therapies; however, the training requirements in these areas vary.[87]

INDUSTRY TRENDS

In 2014, The American Association of Naturopathic Physicians reported having 1,325 members in the U.S.[88] Naturopathic physicians treat patients of all ages with most patients falling between ages 16-34 (37.63%) and 35-64 (47.45%).[89] The five most common aliments treated by naturopathic physicians are: malaise and fatigue (6.26% of visits); constipation (3.52% of visits); lower back pain (2.76% of visits); neck pain (2.41% of visits); and, human immunodeficiency virus (2.17% of visits).[90]

80 "An Introduction to Naturopathy" National Center for Complementary and Alternative Medicine, April 2007, p. 4-5.
81 Ibid, p.3- 4.
82 "Licensed States and Licensing Authorities" The American Association of Naturopathic Physicians, 2014, http://www.naturopathic.org/content.asp?contentid=57 (Accessed 4/8/15).
83 Ibid.
84 Ibid.
85 "Naturopathy: An Introduction" National Center of Complementary and Alternative Medicine, March 2012, p. 4.
86 "An Introduction to Naturopathy" National Center for Complementary and Alternative Medicine, April 2007, p. 4.
87 Ibid.
88 "Online Directory" American Association of Naturopathic Physicians, 2015, http://www.naturopathic.org/AF_MemberDirectory.asp (Accessed 4/8/15).
89 "Naturopathic Practice at North American Academic Institutions: Description of 300,483 Visits and Comparison to Conventional Primary Care" By Steven Chamberlin et al, Integrative Medicine Insights, September 2014, p. 10.
90 Ibid, p. 12.

CONCLUSION

In a constantly changing environment of healthcare reform and demographic transformation, the American College for Advancement in Medicine hypothesizes an increased emphasis on integrative medicine.[91] Specifically, they believe that in order for healthcare reform to be effective, primary care physicians must be provided with more resources and time for every patient, integrative medical services that have evidence-based support should be covered through government-sponsored healthcare programs, and the general public should be provided with the information and resources necessary to sustain wellness and prevent disease and disability.[92] In fact, NCCAM was established in 1998 "to define, through rigorous scientific investigation, the usefulness and safety of complementary and integrative interventions…"[93] NCCAM's research capabilities were broadened when President Barack Obama signed the American Recovery and Reinvestment Act of 2009, making evidence-based CAM an area of growing potential.[94]

The increasing demand for CAM also suggests that there is potential for continued growth in this area of medicine. This forecast is further bolstered by: (1) a greater public acceptance of CAM therapies; (2) the increase in chronic conditions and disabilities targeted by CAM providers; (3) the rise in disposable incomes in the US; and (4) the further integration between conventional healthcare providers and CAM practitioners.[95]

91 "Integrative Medicine Critical to Healthcare Reform—American College for Advancement in Medicine" American College for Advancement in Medicine, July 23, 2009, http://www.medicalnewstoday.com/articles/158576.php, (Accessed 10/20/09).
92 Ibid.
93 "The NIH Almanac" National Center for Complementary and Integrative Health, 3/6/2015, http://www.nih.gov/about/almanac/organization/NCCIH.htm (Accessed 4/9/15).
94 "NCCAM Investments Related to the American Recovery and Rinvestment Act" National Center for Complentary and Integrative Health, 2/12/2015, https://nccih.nih.gov/recovery (Accessed 4/9/15).
95 "IBISWorld Industry Report 62139b: Alternative Healthcare Providers in the US" By Dmitry Diment, IBISWorld, November 2014, p. 10-11.

Key Sources

Key Source	Description	Citation	Website
National Center for Complementary and Alternative Medicine (NCCAM)	"The Federal Government's lead agency for scientific research on the diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine."	"About NCCAM?" by the National Center for Complementary and Alternative Medicine, National Institute of Health, U.S. Department of Health and Human Services, http://nihsenior health.gov/cam/campractices/01.html (accessed November 20, 2009).	http://nccam.nih.gov
Federal Food, Drug and Cosmetic Act	"The Federal Food, Drug, and Cosmetic Act of 1938 was passed after a legally marketed toxic elixir killed 107 people, including many children. The FD&C Act completely overhauled the public health system. Among other provisions, the law authorized the FDA to demand evidence of safety for new drugs, issue standards for food, and conduct factory inspections."	"Regulatory Information: Legislation," by the Food and Drug Administration, September 15, 2009, www.fda.gov/RegulatoryInformation/Legislation/default.htm (accessed October 20, 2009).	www.fda.gov/RegulatoryInformation/Legislation/FederalFoodDrugandCosmeticActFDCAct/default.htm
Public Health Service Act	"The Public Health Service Act of July 1, 1944 (42 U.S.C. 201), consolidated and revised substantially all existing legislation relating to the Public Health Service. The basic Public Health Service legal responsibilities have been broadened and expanded many times since 1944. Major organizational changes have occurred within the Public Health Service to support its mission to promote the protection and advancement of the Nation's physical and mental health."	"Public Health Service," by the United States Department of Health and Human Services, March 29, 2005, www.hhs.gov/about/opdivs/phs.html (accessed October 20, 2009).	www.fda.gov/RegulatoryInformation/Legislation/ucm148717.htm
Complementary and Alternative Medicine Products and Their Regulation by the Food and Drug Administration	A guidance for industry issued by the U.S. Department of Health and Human Services Food and Drug Administration: Center for Biologics Evaluation and Research (CBER), Center for Drug Evaluation and Research (CDER), Center for Devices and Radiological Health (CDRH), Center for Food Safety and Applied Nutrition (CFSAN).	"Complementary and Alternative Medicine Products and Their Regulation by the Food and Drug Administration," by the U.S. Department of Health and Human Services, Food and Drug Administration, December 2006, www.healthfreedom.net/storage/aahf/documents/cam_guideline.pdf (accessed October 20, 2009).	www.fda.gov/OHRMS/DOCKETS/98fr/06d-0480-gld0001.pdf

Associations

Type of Organization	Association	Description	Citation	Contact Information
Federal	National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM)	"NCCAOM, established in 1982 as a non-profit organization, currently operates under Section 501(c)(6) of the Internal Revenue Code. The mission of the NCCAOM is to establish, assess, and promote recognized standards of competence and safety in acupuncture and Oriental medicine for the protection and benefit of the public."	"About NCCAOM: A Historical Perspective," National Certification Commission for Acupuncture and Oriental Medicine, www.nccaom.org/about/index.html (Accessed 1/29/10).	National Certification Commission for Acupuncture and Oriental Medicine 76 South Laura Street, Suite 1290 Jacksonville, FL 32202 Phone: 904-598-1005 Fax: 904-598-5001 www.nccaom.org
Federal	Accreditation Commission for Acupuncture and Oriental Medicine (ACAOM)	ACAOM is "the national accrediting agency recognized by the U.S. Department of Education to accredit Master's-level programs in the acupuncture and Oriental medicine profession."	"ACAOM," Accreditation Commission for Acupuncture and Oriental Medicine, www.acaom.org/ (Accessed 1/29/10).	Accreditation Commission for Acupuncture and Oriental Medicine 8941 Aztec Drive Eden Prairie, MN 55347 Phone: (952) 212-2434 Fax: (952) 657-7068 Email: coordinator@acaom.org www.acaom.org
Federal	National Association for Holistic Aromatherapy (NAHA)	"The National Association for Holistic Aromatherapy is an educational, nonprofit organization dedicated to enhancing public awareness of the benefits of true aromatherapy. NAHA is actively involved with promoting and elevating academic standards in aromatherapy education and practice for the profession."	"NAHA Information," National Association for Holistic Aromatherapy, www.naha.org/naha.htm (Accessed 1/29/10).	National Association for Holistic Aromatherapy PO Box 27871 Raleigh, NC 27611-7871 Phone: (919) 894-0298 Fax: (919) 894-0271 Email: info@naha.org www.naha.org
Federal	National Association of Cognitive and Behavioral Therapists (NACBT)	"The NACBT is the leading organization dedicated exclusively to supporting, promoting, teaching, and developing cognitive-behavioral therapy and those who practice it."	"NACBT Online Headquarters," National Association of Cognitive and Behavioral Therapies" www.nacbt.org (Accessed 1/29/10).	National Association of Cognitive and Behavioral Therapists P.O. Box 2195 Weirton, WV 26062 Phone: (800) 253-0167 E-mail: nacbt@nacbt.org www.nacbt.org
Federal	American Massage Therapy Association (AMTA)	AMTA "works to establish massage therapy as integral to the maintenance of good health and complementary to other therapeutic processes; to advance the profession through ethics and standards, continuing education, professional publications, legislative efforts, public education, and fostering the development of members."	"About AMTA," American Massage Therapy Association, www.amtamassage.org/about/about.html (Accessed 1/29/10).	American Massage Therapy Association 500 Davis St. Suite 900Evanston, IL 60201-4695 Phone: 847-864-0123 Fax: 847-864-5196 Email: info@amtamassage.org www.amtamassage.org
Federal	National Certification Board for Therapeutic Massage and Bodywork (NCBTMB)	"NCBTMB is an independent, private, nonprofit organization that was founded in 1992 to establish a certification program and uphold a national standard of excellence."	"About NCBTMB," National Certification Board for Therapeutic Massage and Bodywork, www.ncbtmb.org/about.php (Accessed 1/29/10).	National Certification Board for Therapeutic Massage and Bodywork 1333 Burr Ridge Parkway Suite 200 Burr Ridge, IL 60527 Phone: (800) 296-0664 E-mail: info@ncbtmb.org www.ncbtmb.org

(continued)

Type of Organization	Association	Description	Citation	Contact Information
Federal	Council for Homeopathic Certification (CHC)	"In 1991 the Council for Homeopathic Certification was formed in response to a new vision for the future of homeopathy as a unified profession of highly trained and certified practitioners."	"About the CHC," Council for Homeopathic Certification, www.homeopathicdirectory.com/index.php?option=com_content&view=article&id=45&Itemid=58 (Accessed 1/29/10).	Council for Homeopathic Certification PMB 187 16915 SE 272nd Street Suite #100 Covington, WA 98042 Phone: 866-242-3399 Fax: 815-366-7622 E-mail: chcinfo@homeopathicdirectory.com www.homeopathicdirectory.com
Federal	Homeopathic Academy of Naturopathic Physicians (HANP)	"The HANP is a specialty society within the profession of naturopathic medicine, and is affiliated with the American Association of Naturopathic Physicians"	"Welcome to the HANP," Homeopathic Academy of Naturopathic Physicians, www.hanp.net/ (Accessed 1/29/10).	Homeopathic Academy of Naturopathic Physicians 1607 Siskiyou BlvdAshland, OR 97520Phone: (541) 708-1827 E-mail: info@hanp.net www.hanp.net
Federal	North American Board of Naturopathic Examiners (NABNE)	The NABNE is "responsible for qualifying applicants to take the NPLEX Examinations, administering the examinations to examinees, and preparing and sending exam results and transcripts to licensing/regulatory authorities."	"About NPLEX," North American Board of Naturopathic Examiners, www.nabne.org/nabne_page_23.php (Accessed 1/29/10).	North American Board of Naturopathic Examiners Suite 119, #321 9220 S.W. Barbur Blvd. Portland, OR 97219-5434 Phone: (503) 778-7990 E-mail: info@nabne.org www.nabne.org
Federal	Council for Naturopathic Medical Education (CNME)	"Accredit(s) naturopathic medical education programs that voluntarily seek recognition that they meet or exceed CNME's standards."	"About the Council on Naturopathic Medical Education," Council on Naturopathic Medical Education, www.cnme.org/ (Accessed 1/29/10).	Council for Naturopathic Medical Education PO Box 178 Great Barrington, MA 01230 Phone: (413) 528-8877 www.cnme.org
Federal	American College for Advancement in Medicine (ACAM)	"The American College for Advancement in Medicine is a not-for-profit association dedicated to educating physicians and other health care professionals on the latest findings and emerging procedures in complementary, alternative and integrative (CAIM) medicine."	About the American College for Advancement in Medicine," American College for Advancement in Medicine, www.acamnet.org/site/c.ltJWJ4MPIwE/b.5457257/k.DB3C/About_the_American_College_for_Advancement_in_Medicine.htm (Accessed 1/29/10).	American College for Advancement in Medicine 380 Ice Center Lane, Suite C Bozeman, MT 59718 Phone: (800) 532-3688 Fax: (406) 587-2451 E-mail: info@acam.org www.acam.org

Chapter 12

Healthcare and Small Businesses

KEY TERMS
Cadillac Tax
Cafeteria Plan
Employee Cost Sharing
Full-Time Equivalent (FTE) Employees
Small Business Health Options Program (SHOP) Exchange
Small Business Healthcare Affordability Tax Credits
Small Firm Penalty Exemption

Key Concept	Definition	Citation	Concept Mentioned on Page #
Cadillac Tax	A 40% tax on any excess benefit offered as part of an employer-sponsored health insurance plan.	"Patient Protection and Affordable Care Act" Pub. L. No. 111-148, Section 9001, 124 Stat. 848 (March 23, 2010).	682
Cafeteria Plan	A health insurance plan characterized by two requirements: (1) that "*all participants are employees*"; and, (2) that participants "*may choose among 2 or more benefits consisting of cash and qualified benefits*."	"Cafeteria Plans" 26 U.S.C. § 125(d)(1) (2012).	681
Employee Cost-Sharing	"The share of costs covered by your insurance that you pay out of your own pocket."	"Cost-Sharing" Healthcare.gov, 2015, https://www.healthcare.gov/glossary/cost-sharing/ (Accessed 8/13/15).	671
Full-Time Equivalent (FTE) Employees	For purposes of the Small Business Healthcare Affordability Tax Credits, the result of dividing the "total number of hours of service for which wages were paid by the employer to employees during the taxable year, by 2080."	"Patient Protection and Affordable Care Act" Pub. L. No. 111-148, Section 1421, 124 Stat. 238 (March 23, 2010).	679
Small Business Health Options Program (SHOP) Exchange	A health insurance exchange designed to help business owners with less than 50 *full-time equivalent* (FTE) employees "in facilitating the enrollment of their employees in qualified health plans offered in the small group market in the State…"	"Patient Protection and Affordable Care Act" Pub. L. No. 111-148, Section 1311, 124 Stat. 173 (March 23, 2010).	680
Small Business Healthcare Affordability Tax Credits	A tax credit offered to business owners with less than 25 FTE employees who contribute at least half the cost of an employee's health insurance premium.	"Employee Health Insurance Expenses of Small Employers" 26 U.S.C. § 45R (2010).	678–679
Small Firm Penalty Exemption	An exemption from penalties due to failure to offer health insurance coverage for full-time employees. The exemption applies to small business owners who employ at or below 50 full-time employees (defined as those who work at least 30 hours per week, on average).	"Shared Responsibility for Employers Regarding Health Coverage" 26 U.S.C. § 4980H (2010).	679–680

On June 28, 2012, the *Supreme Court of the United States* (SCOTUS) handed down its highly anticipated decision upholding much of the 2010 healthcare reform act, the *Patient Protection and Affordable Care Act* (ACA).[1] This opinion addressed two cases, *National Federation of Independent Business v. Sebelius* and *HHS v. Florida*.[2] SCOTUS stunned healthcare industry commentators and reform opponents by relying on a narrow interpretation of Federal taxing authority to support its decision to uphold the individual mandate provision.[3] Touted as the one of the most significant SCOTUS decisions of this century, the Court's five to four ruling to uphold the law has had, and will continue to have, significant repercussions throughout the U.S. healthcare delivery system, as well as on the businesses and professionals that operate therein.[4] In 2015, the ACA passed its second major legal challenge before SCOTUS, in *David King et al. v. Sylvia Mathews Burwell et al.* (commonly referred to as *King v. Burwell*), this time attacking the provision of subsidies to enrollees on the federally-run health insurance exchanges.[5] As a result of SCOTUS's 2012 ruling as well as its 2015 ruling in *King v. Burwell*, the majority of the ACA remained intact and will continue to be implemented as scheduled. While numerous bills have unsuccessfully attempted to repeal the entirety of the ACA,[6] the ACA remains largely unchanged to date, and small businesses should carefully plan for and remain cognizant of ACA provisions that have been implemented thus far, or will be implemented in the near future. The ACA will have a significant effect on all U.S. business employers, however, the scope and extent of that impact will depend to a great degree on the classification of businesses, i.e., small and large employers.[7]

Within the ACA, a small business is defined as having no more than 50 *full time equivalent* (FTE) employees.[8] Small businesses and healthcare enterprises will continue to be subject to those provisions of the ACA that have already taken effect, such as various reporting and transparency requirements and tax provisions (see *Specific Healthcare Legislation Provisions Affecting Small Businesses* section below). Further, small businesses, and the CPAs that advise them, will continue to face challenges associated with the implementation of new provisions of the ACA. Delays regarding the rollout of the *Small Business Health Options Program* (SHOP) exchanges (see *Small Business Health Options Program (SHOP Exchange)* section below)[9] as well as the implementation of the employer mandate provisions (see *Small Firm Penalty Exemption* section below)[10] have previously created headaches for small business owners. However, continued planning is also necessary to prepare for further implementation of ACA provisions, e.g., the institution of the "*Cadillac tax*" in 2018, which imposes a 40 percent tax on

1 Popularly referred to as "Obamacare."
2 "National Federation of Independent Business v. Sebelius" 132 S. Ct. 2566 (2012).
3 "Tax Power: The Little Argument That Could" By Jack M. Balkin, CNN, June 30, 2012, http://www.cnn.com/2012/06/28/opinion/balkin-health-care/ (Accessed 8/17/15).
4 "National Federation of Independent Business v. Sebelius" 132 S. Ct. 2566, 2576 (2012).
5 "Supreme Court Upholds Obamacare Subsidies" By Kimberly Leonard, U.S. News and World Report, June 25, 2015, http://www.usnews.com/news/articles/2015/06/25/supreme-court-upholds-obamacare-subsidies-in-king-v-burwell (Accessed 8/17/15).
6 In fact, Republicans have "voted 54 times to undo, revamp, or tweak the law." "The House has voted 54 times in four years on Obamacare. Here's the full list" By Ed O'Keefe, The Washington Post, March 21, 2014, http://www.washingtonpost.com/blogs/the-fix/wp/2014/03/21/the-house-has-voted-54-times-in-four-years-on-obamacare-heres-the-full-list/ (Accessed 10/20/14).
7 "Affordable Care Act Tax Provisions for Employers" Internal Revenue Service, August 13, 2015, http://www.irs.gov/Affordable-Care-Act/Employers (Accessed 8/18/15).
8 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, 124 Stat. 119, 171-172 (March 23, 2010).
9 "Small Businesses in These Five States to Get Early Access to New Healthcare.gov Portal" By J.D. Harrison, The Washington Post, September 3, 2014, http://www.washingtonpost.com/business/on-small-business/small-businesses-in-these-five-states-to-get-early-access-to-new-healthcaregov-portal/2014/09/03/24500924-3304-11e4-a723-fa3895a25d02_story.html (Accessed 9/12/14).
10 "U.S. Treasury Department: Fact Sheet," U.S. Treasury Department, http://www.treasury.gov/press-center/press-releases/Documents/Fact%20Sheet%20021014.pdf (Accessed 3/30/15).

"*excess benefits*" provided in employer-sponsored health insurance plans.[11] Each of these ACA provisions are further discussed throughout this Chapter.

Notwithstanding the SCOTUS rulings, substantive change in U.S. healthcare delivery system will be, by necessity, an iterative process, likely with several phases of political bloodletting and heated debate. The SCOTUS decisions on the ACA represent a relevant step forward in the debate, and progress toward creating value-based reimbursement synergies between achieving high quality and beneficial outcomes in pursuit of lower overall costs.[12] One particular mechanism implemented by the ACA to lower the costs of healthcare, while simultaneously improving health outcomes, is the creation of *accountable care organizations* (ACOs),[13] a type of emerging healthcare organization in which a set of providers, usually physicians and hospitals, are held accountable under a contract with payor(s) for the cost and quality of care delivered to a specific local population.[14] Small businesses, and the CPAs that advise them, should understand how the health insurance they provide for their employees may be affected by these efforts. Small businesses and their CPAs should also realize that these ACA provisions are not likely to end the rancorous political debate, as more changes related to the ACA's implementation and development of *value-based purchasing*, through ACOs and other means, will be required. While the path forward is not yet fully apparent, our current national trajectory of healthcare costs and outcomes is unsustainable, and actions to change the U.S. healthcare industry into a more sustainable model will likely affect the decision-making of small businesses. Finding the solution is not a matter of a lack of money or a paucity of ideas, but rather the public and political will for change. Whether one views it as a blessing or a curse, it is undeniable that, "*we live in interesting times*."[15]

AN INTRODUCTION TO HEALTHCARE AND SMALL BUSINESSES

HEALTHCARE AND SMALL BUSINESSES: CHALLENGES AND OPPORTUNITIES

Small businesses should consider their own unique circumstances in determining whether the opportunities of offering health insurance to its employees outweigh the associated challenges. Challenges may include costs absorbed by the employer, uncertainties involved with the health of individual employees (e.g., accidents or unexpected illness), and the administrative burden placed on employers. However, a small employer may stand to benefit from increased employee

11 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, Section 9001, 124 Stat. 848 (March 23, 2010).
12 "Accountable Care Organizations: Value Metrics and Capital Formation" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Boca Raton, FL: CRC Press, 2013, p. 1.
13 See Chapters 2 and 6 of An Era of Reform.
14 "Accountable Care Organizations: Value Metrics and Capital Formation" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Boca Raton, FL: CRC Press, 2013, p. 1.
15 Robert F. Kennedy, Day of Affirmation Address at the University of Capetown (June 6, 1966).

retention rates, the receipt of tax credits and allowance of tax deductions, and the increased attraction of high-quality employees.

The cost of an employer-sponsored health insurance plan depends on the size and location of the business, the type of plan selected, and, in some cases, the health status of the employees.[16] The primary cost involved with employment-based insurance is called the *premium*, which is the "*[a]greed upon fees paid for coverage of medical benefits for a defined benefit period.*"[17] Typically, the premium amount is shared between the employer and employee.[18] Small businesses also risk *adverse selection*, where only a few individuals reap the benefits of using medical services while the entire group is paying the premiums.[19]

Some of the opportunities involved with providing employer-based health insurance are economically beneficial. Offering health insurance can help attract and retain high-quality employees. Employee retention is a significant cost containment method, as recruitment and employee turnover can account for approximately 21 percent of salary costs.[20] Providing employees with health insurance may also reduce the cost of absenteeism and limit disability and workers' compensation claims.[21] Federal and state governments also provide tax incentives to employers who offer health benefits, and premiums paid by small businesses are fully tax-deductible. These tax benefits were introduced in Chapter 6 of *An Era of Reform—The Four Pillars*, and will be further discussed in *Specific Healthcare Legislation Provisions Affecting Small Businesses* section below.[22]

HEALTHCARE AND SMALL BUSINESSES: THE ACCOUNTANT'S ROLE

Rapidly changing regulations, reimbursement issues, competitive forces, and technological advancements have created opportunities for those seeking to advise small businesses. As the healthcare industry has become more complicated over the past several decades, demand has increased for services related to assisting businesses in navigating the regulatory and financial risks that have arisen, e.g., ERISA, COBRA, FMLA, HIPAA, and other federal and state regulations.[23] For example, a survey found that many small business employers do not understand how health benefits are treated by the tax code and are also unaware of many federal

16 The insurer may charge the group higher premiums if that group is older than average, or if a large percentage of the group uses tobacco products, and no wellness program is in place to help these individuals quit smoking. "Navigator Resource Guide on Private Health Insurance Coverage & the Health Insurance Marketplace" Robert Wood Johnson Foundation and The Center on Health Insurance Reforms, Georgetown University Health Policy Institute, http://www.rwjf.org/content/dam/farm/reports/reports/2014/rwjf408970/subassets/rwjf408970_3 (Accessed 3/26/15), p. 93.

17 "Definitions of Health Insurance Terms, U.S. Bureau of Labor Statistics, http://www.bls.gov/ncs/ebs/sp/healthterms.pdf (Accessed 3/26/15), p. 6

18 "Table 4. Medical plans: Share of premiums paid by employer and employee for family coverage" United States Department of Labor Bureau of Labor Statistics, http://www.bls.gov/news.release/ebs2.t04.htm (Accessed 3/30/15).

19 "Health Insurance: A Small Business Guide" The New York State Insurance Department, http://www.dfs.ny.gov/consumer/smallbus/hsmbsrpt.pdf (Accessed 8/11/15) p. 2.

20 "There Are Significant Business Costs to Replacing Employees" By Heather Boushey and Sarah Jane Glynn, Center for American Progress, November 16, 2012, http://cdn.americanprogress.org/wp-content/uploads/2012/11/CostofTurnover.pdf (Accessed 9/30/14).

21 "Guide to Health Insurance Options for Small Businesses" Robert Wood Johnson Foundation, http://covertheuninsured.org/files/u4/BusinessGuide.pdf (Accessed 8/10/10), p. 2.

22 "Guide to Health Insurance Options for Small Businesses" Robert Wood Johnson Foundation, http://covertheuninsured.org/files/u4/BusinessGuide.pdf (Accessed 8/10/10), p. 2. See also the *Taxation of Health Benefits* section for more information about the taxation of health benefits.

23 See the *Taxation of Health Benefits* and *Current Rules and Regulations Affecting Employer-Based Health Benefits* sections of this chapter.

and state laws that affect small businesses.[24] Accordingly, the accountant has an important role in advising small businesses, and understanding some of the basic principles related to the healthcare sector is an important step in successfully advising clients and helping them manage their respective assets and liabilities.[25]

HEALTHCARE AND SMALL BUSINESSES: CURRENT TRENDS

GENERAL TRENDS

In the United States, employers of all sizes have been affected by rising healthcare costs, including navigating managed care organizations and varied fee schedules among different payors.[26] Coupled with this challenge is the aging population of the United States, for whom it has been predicted will lead to increased usage of healthcare services, potentially while a person remains in the workforce[27] (see Chapter 6 of *An Era of Reform—The Four Pillars*). Employers should note the rising cost and utilization of healthcare services when considering the decision to offer health benefits to their employees.

Beneficiaries of employer-sponsored health insurance continue to experience more financial difficulty affording healthcare when compared to the general population, particularly for out-of-pocket expenditures. From 2007 to 2010, out-of-pocket spending increased by approximately 1.4 percent across all health insurance markets, a much slower rate than the 5.3 percent growth from 2004 to 2007.[28] However, per capita out-of-pocket spending decreased for all groups *except* for those with employer-sponsored or individual health insurance coverage, which spending for this group increased 4 percent resulting in an average payment of $800 per individual.[29] This inverse trend finds its basis in employers becoming "*increasingly willing to pass more of the health care cost increases onto employees*."[30]

24 "Small Employers and Health Benefits: Findings from the 2002 Small Employer Health Benefits Survey" Paul Fronstin and Ruth Helman, Employee Benefit Research Institute, No. 253 (January 2003), p. 16.

25 "Healthcare Consulting Marketplace 2009-2012: Opportunities in Life Sciences, Provider, Payer, and Government Markets; Research Summary" Kelly Matthews and Derek Smith, Kennedy Consulting Research & Advisory, BNA Subsidiaries, Inc., 2009, p.4.

26 See Chapter 2 of *An Era of Reform—The Four Pillars*. See figures 1-2 and 1-3 in Chapter 1 of *An Era of Reform—The Four Pillars*.

27 "The Lifetime Distribution of Health Care Costs," By Berhana Alemayehu and Kenneth E. Warner, HSR: Health Services Research, Vol. 39 No. 3, June 2004, p. 640; "How Will Changing Demographics in the U.S. Influence Business in the Coming Decade?" The Wall Street Journal, November 29, 2013, http://www.wsj.com/articles/SB10001424052702303562904579228000262387472 (Accessed 8/17/15).

28 "Out-Of-Pocket Health Care Expenditures, By Insurance Status, 2007–10" By Mary K. Catlin, John A. Poisal, and Cathy A. Cowan, Health Affairs, Vol. 34, No. 1 (2015), p. 113.

29 "Out-Of-Pocket Health Care Expenditures, By Insurance Status, 2007–10" By Mary K. Catlin, John A. Poisal, and Cathy A. Cowan, Health Affairs, Vol. 34, No. 1 (2015), p. 113; "Out-of-Pocket Spending Trends (2013)" Health Care Cost Institute, Issue Brief #9 (October 2014), p. 1.

30 "Out-Of-Pocket Health Care Expenditures, By Insurance Status, 2007–10" By Mary K. Catlin, John A. Poisal, and Cathy A. Cowan, Health Affairs, Vol. 34, No. 1 (2015), p. 113.

SMALL EMPLOYER TRENDS

Employee Coverage and Participation

In 2014, 55 percent of all American workers received health benefits through employer-based health insurance.[31] Characteristics of employer-based health insurance are provided in the following tables.

Table 12-1: Percentage of Workers Covered by Employer-Based Health Plans, by Firm Size[32]

Firm Size	2011	2012	2013	2014
3–24 workers	38%	36%	36%	33%
25–49 workers	49%	54%	53%	52%
50–199 workers	59%	58%	57%	55%
200–999 workers	63%	61%	63%	60%
1,000–4,000 workers	66%	66%	67%	66%
5,000 or more workers	64%	61%	58%	61%
All small firms (3–199 workers)	48%	47%	46%	44%
All large firms (200 or more workers)	64%	62%	61%	62%

Table 12-2: Percentage of Firms Offering Health Plans to Employees, by Firm Size[33]

Firm Size	2011	2012	2013	2014
3–9 workers	48%	50%	45%	44%
10–24 workers	71%	73%	68%	64%
25–49 workers	85%	87%	85%	83%
50–199 workers	93%	94%	91%	91%
All small firms (3–199 workers)	59%	61%	57%	54%
All large firms (200 or more workers)	99%	98%	99%	98%

Table 12-3: Types of Health Benefits Offered by Small Firms[34]

Plan Type	2011	2012	2013	2014
Conventional Plan (Indemnity Insurance)	2%	1%	1%	<1%
HMO	9%	11%	15%	12%
PPO	46%	45%	47%	46%
POS	20%	19%	16%	17%
HDHP/SO	24%	24%	21%	24%

Costs of Health Insurance

The average annual premiums in 2014 were $6,025 for single coverage and $16,834 for family coverage.[35] Family premiums increased by three percent from 2013, while single premiums

31 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 67.

32 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 67.

33 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 42.

34 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 42; "Employer Health Benefits: 2013 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (August 2013), p. 66; "Employer Health Benefits: 2012 Annual Survey" The Kaiser Family Foundation and Health Research & Education Trust (September/August 2012), p. 64; "Employer Health Benefits: 2011 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2011), p. 58.

35 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 14.

remained nearly constant from 2013.[36] Overall, the 2014 family coverage premium rates were 26 percent higher than they were in 2009, and 69 percent higher than they were in 2004.[37] Among small businesses, the 2014 rates were 25 percent higher than they were in 2009, and 63 percent higher than in 2004.[38] Among small businesses, the average annual premium was $5,788 for single coverage and $15,849 for family coverage.[39] Premium rates also varied according to geographic region. For example, covered workers in the Northeast paid the highest average premiums relative to other geographic regions in the United States, while workers in the South paid the lowest average premiums.[40]

While the average family premium for covered workers in small firms (3-49 employees) is significantly lower than the average annual premium for covered workers in large firms, on average, small firms pay up to 18 percent more in premiums than large firms for the same health insurance policies to offset higher insurer overhead costs.[41] When comparing employees from the private and public sectors, premiums paid by employees in the private sector averaged lower than premiums paid by public sector employees for individual and family coverage.[42]

HEALTHCARE AND SMALL BUSINESSES: IMPORTANT CONSIDERATIONS

THE BASICS OF EMPLOYER-BASED HEALTH BENEFIT PLANS

Types of Administrators

The various administrators that employers may use to manage health benefits include: (1) commercial health insurance; (2) *Blue Cross and Blue Shield* (BCBS) plans; (3) self-insured plans administered by third-party administrators; or, (4) multiple employer welfare plan arrangements.[43] These administrators are more fully detailed in Chapter 2 of *An Era of Reform—The Four Pillars*; this Chapter presents features of these administrators relevant to owners of small businesses.

36 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 14.
37 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 15.
38 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 15.
39 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 14.
40 "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 19.
41 "Small Businesses and The Affordable Care Act of 2010" By Sarah R. Collins, Karen Davis, Jennifer L. Nicholson, and Kristof Stremikis, The Commonwealth Fund, September 2010, p. 2.
42 "Premiums and Employee Contributions for Employer-Sponsored Health Insurance: Private Versus Public Sector, 2013" Karen E. Davis, MA, Agency for Healthcare Research and Quality, June 2013, http://meps.ahrq.gov/mepsweb/data_files/publications/st474/stat474.shtml (Accessed 8/7/15).
43 "Chapter 20 Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 202.

Commercial Health Insurance

To the small business owner, the calculation of premium rates is an important action by a health plan administrator. Commercial health insurers can adjust premiums by utilizing one of two types of rating systems: (1) an experience-rated plan, which involves setting the premium to reflect claim experiences of a group of 50 employees or more; or, (2) a community-rated plan, in which the premium is adjusted according to the health of individuals in the community and the claim experience of the community.[44] Under the ACA, community rating standards in the individual and small group market are subject to approval by the *U.S. Department of Health and Human Services* (HHS).[45] Moreover, several states have promulgated regulations in order to determine when community ratings may be applied.[46]

Blue Cross Blue Shield Association

Small business owners should also be cognizant of BCBS actions that can affect the provision and cost of providing health benefits to employees. For BCBS plans, beneficiary cost-sharing is a common feature that impacts employer-sponsored insurance coverage. Depending on the enrollee's coverage and the services sought, patients are usually subject to deductible and co-pay requirements, with co-pay amounts commonly ranging from 20% to 25%.[47]

Self-Insurance Plans

The adoption of self-insurance plans, also known as "*self-funded*" plans, has been a defining trend in the health insurance industry for over 35 years.[48] Employers adopting a self-insurance plan make the conscious choice to undertake the risks associated with the cost of healthcare, and set aside money to pay these costs as they arise.[49] The percentage of self-insuring small businesses has remained low relative to the percentage of self-insuring large employers. In 2014, only 14.4% of employers with less than 10 employees self-insured at least one offered health insurance plan.[50] In contrast, 84.2% of employers with over 1,000 employees self-insured at least one offered health insurance plan in 2014.[51]

Multiple Employer Welfare Arrangement

Small business owners can also provide a health benefits plan that shares the risk of insurance with a pool beyond the size of their workforce. To do this, an employer may contract with the

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44 "Chapter 20 Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 202.

45 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, § 2701(a)(2)(B), 124 Stat. 155 (March 23, 2010).

46 For example, see: "Rating of Individual and Small Group Health Insurance Contracts" NY. Ins. Law § 4317 (McKinney 2013).

47 "BlueCross BlueShield" in "Understanding Health Insurance: A Guide to Billing and Reimbursement, 12th Edition," By Michelle A. Green and JoAnn C. Rowell, Cengage Learning, 2013, p. 467.

48 "Self-Insured Group Health Plans" Self-Insurance Institute of America, Inc., siaa.org, 2009, www.siia.org/i4a/pages/Index.cfm?pageID=4546 (Accessed 8/31/10); Private Health Insurance and Managed Care" in "Introduction to Health Services," By Alma Koch, Thomson Delmar Learning, 2008, p. 113.

49 "The Financial Environment" in "Healthcare Finance: An Introduction to Accounting and Financial Management, 3rd Edition," By Louis C. Gapenski, Health Administration Press/Association of University Programs in Health Administration, 2005, p. 36.

50 "Medical Expenditure Panel Survey Insurance Component Chartbook 2014" Agency for Healthcare Research and Quality, August 2015, http://meps.ahrq.gov/mepsweb/survey_comp/MEPSICChartbook.pdf (Accessed 8/13/15) p. 19.

51 "Medical Expenditure Panel Survey Insurance Component Chartbook 2014" Agency for Healthcare Research and Quality, August 2015, http://meps.ahrq.gov/mepsweb/survey_comp/MEPSICChartbook.pdf (Accessed 8/13/15) p. 19.

administrator of a *multiple employer welfare arrangement* (MEWA), which is an employee benefit plan that offers benefits to employees of two or more employers.[52]

Managed Care

Starting in the 1900s, the majority of employer-based health plans have utilized a type of *managed care* model to provide health insurance coverage to employees.[53] Managed care plans integrate the financing (i.e., insurance) and provision of health services under the administration of a *managed care organization* (MCO).[54] Through various provider monitoring mechanisms, e.g., clinical practice standardization, effective staff use, and selective contracting, the financial risk in providing healthcare services is borne by both the MCO and participating providers.[55] Four of the most popular models for MCOs are *health maintenance organizations* (HMOs), *preferred provider organizations* (PPOs), *exclusive provider organizations* (EPOs), and *point of service* (POS) plans. For a detailed discussion on the structure and operation of these MCO models, see Chapter 2 in *An Era of Reform—The Four Pillars*.

Reimbursement

Healthcare reimbursement is the payment received by providers for the services they render to patients.[56] Providers receive reimbursement based on the rates and terms of numerous contracts for reimbursement signed with different healthcare payors, including commercial insurance companies, employers, and government agencies. These payment schemes varied widely and may lead to providers receiving differing levels of reimbursement for providing the same service to a beneficiary. A description of each of these schemes is provided below in Table 12-4, below.

Table 12-4: Description of Reimbursement Schemes[57]

Reimbursement Type	Description
Fee-for-Service (FFS)	Physicians paid based on charges incurred for services rendered
Full-Risk Capitation	Pre-paid reimbursement at a set value regardless of service utilization, with the entire financial risk borne by the provider
Blended Capitation	Combination of FFS and capitated payments
Pay for Performance	Part of payment is dependent upon reaching certain performance objectives, such as quality-based standards
Bundled Payments	Payments for multiple related procedures or diagnoses are combined to reimburse for the entirety of an episode of care

52 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 203; "Employer Health Benefits: 2014 Annual Survey" The Kaiser Family Foundation and Health Research & Educational Trust (September 2014), p. 86. For more information related to MEWAs, see the U.S. Department of Labor MEWA Guide, available at www.dol.gov/ebsa/Publications/mewas.html.

53 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 204.

54 "Healthcare Finance: An Introduction to Accounting and Financial Management, 3rd Edition" By Louis C. Gapenski, Health Administration Press/Association of University Programs in Health Administration, 2004, p. 4.

55 "A Guide to Consulting Services for Emerging Healthcare Organizations" By Robert James Cimasi, John Wiley & Sons, Inc., 1999, p. 12.

56 See Chapter 2 of *An Era of Reform—The Four Pillars*.

57 See Chapter 2 of *An Era of Reform—The Four Pillars*.

Employee/Beneficiary Responsibilities

All employer-based health plans require some type of contribution from the employee beneficiary. Two important cost-sharing features between the employer and the employee are the *deductible* and *coinsurance* provisions. The *deductible* is a "*specified amount of initial medical costs that would otherwise be treated as covered expenses under the plan, which each beneficiary must pay before any expenses are reimbursed by the plan.*"[58] Different plans may have varying deductible amounts for different healthcare services, but each deductible must be paid periodically, typically once a year.[59]

Coinsurance provisions provide that the beneficiary pay a portion (usually 20 percent) of recognized medical expenses, while the plan pays the other portion (usually 80 percent).[60] Most major medical plans require that beneficiaries pay both a *deductible* and *coinsurance*. However, most plans also contain stipulations limiting the amount of out-of-pocket expenditures employees must pay for covered services each year.[61] The ACA also contains provisions to limit beneficiary cost-sharing under a "*qualified health plan*" created in accordance with the statute.[62]

Other Healthcare Plans

In addition to general healthcare benefits, many employers offer other health plans, such as prescription drug benefit plans, dental plans, vision plans, wellness and mental health plans, and retiree benefit plans.

Prescription Drug Benefit Plans

Prescription drug benefit plans provide employees with some form of outpatient drug coverage through a medical provider. Employees pay a copayment, which may vary depending on whether the drug is brand name or generic, and fill their prescriptions through a retail network.[63] Some employers may opt to offer prescription drug benefits separate from their health plan through a *pharmacy benefit manager* in order to control costs and improve the quality of the benefit.[64] Employers may also control cost and quality by requiring employees to use drug cards, participate in mail-order drug plans, or fill prescriptions with generic drugs instead of brand names.[65]

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58 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 206.
59 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 206.
60 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 206.
61 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 206.
62 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, § 1302, 124 Stat. 163, 165-167 (March 23, 2010); see Chapter 6 in *An Era of Reform—The Four Pillars*.
63 "Chapter 21, Prescription Drug Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 219.
64 "Chapter 21 Prescription Drug Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 221.
65 "Chapter 21, Prescription Drug Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 223.

Dental Plans

Employer-based dental plans are typically offered through one of the three following structures, or a combination thereof: (1) the traditional indemnity plan; (2) the network plan; or, (3) the *dental health maintenance organization* (DHMO).[66] Plans generally cover preventive services, such as examinations and x-rays, and at least 80 percent of restorative services, such as fillings and root canals.[67] However, health benefit plans do not typically cover hospitalization due to dental treatment, cosmetic dental work, or cleanings performed more than twice a year.[68]

Vision Care Plans

Vision care plans are similar to dental plans in that larger employers are more likely to offer them than smaller businesses.[69] Typically, employer-based vision benefits include coverage for eye exams, lenses, frames, and eyeglass fittings, with limitations on the frequency of services covered.[70] Payments for vision care benefits include:

(1) Paying for the full cost of services through *usual, customary, and reasonable* criteria;
(2) Requiring deductibles or copayments;
(3) Specifying a covered dollar amount for each service under a schedule-of-benefits approach;
(4) Allowing the employee to contribute to a health flexible spending account; or,
(5) Using a closed-panel arrangement in which a group of vision professionals provide services.[71]

Retiree Benefit Plans

Retiree benefit plans are separated into two categories: (1) plans for retirees *under* the age of 65, which are typically based on coverage they received while working; and, (2) plans for retirees *over* the age of 65, which are coordinated with Medicare.[72] Some employers may choose to extend a retiree's health benefits into retirement and integrate them with Medicare coverage. Employers then subtract the Medicare coverage from their employer-based benefit plan, or through Medigap, which gives employers the option to pay for services not covered by Medicare based on standardized coverage outlined by the government.[73]

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66 "Chapter 22, Dental Care Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 229.
67 "Is dental insurance worth the cost?" By Robert DiGiacomo, Bankrate.com, 2014, http://www.bankrate.com/finance/insurance/dental-insurance-1.aspx (Accessed 9/30/14).
68 "Chapter 22, Dental Care Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 230.
69 "Chapter 23, Vision Care Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 236.
70 "Chapter 23, Vision Care Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 236.
71 "Chapter 23, Vision Care Plans" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 237.
72 "Chapter 26, Retiree Health Benefits" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 265.
73 "Chapter 26, Retiree Health Benefits" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 265; see also Chapter 2 in *An Era of Reform—The Four Pillars*.

Other Benefit Plans

Other benefit plans include wellness plans and mental health plans, as well as long-term care and disability plans. Wellness plans are implemented by employers to prevent physical and mental illness by promoting healthy lifestyles through issuing pamphlets on topics such as smoking, nutrition, exercise and stress; offering an exercise gym for employees; or, any number of other strategies.[74] These wellness programs are designed to lower healthcare costs and retain healthy employees. Some larger businesses also include mental health benefits in their employee health plans, although they may limit the number of covered inpatient days for mental illness.[75] Until recently, employers have had few incentives to offer health benefits for long-term care or disabilities. However, employers may be more likely to offer these types of benefits in the future, due to the implementation of various ACA provisions, as discussed.[76]

TAXATION OF HEALTH BENEFITS

A number of provisions in the IRC affect the taxation of employer-based health plans. The main provisions are provided below in Table 12-5. Additional discussion on IRC provisions relating to providers can be found in Chapter 3 of *An Era of Reform—The Four Pillars*.

CURRENT RULES AND REGULATIONS AFFECTING EMPLOYER-BASED HEALTH BENEFITS

Current regulations affecting employer-based health benefits are primarily the responsibility of the *Department of Labor* and the *U.S. Equal Employment Opportunity Commission* (EEOC).[77] Among the numerous federal rules affecting small business health benefits are: (1) ERISA; (2) the *Consolidated Omnibus Budget Reconciliation Act* (COBRA); (3) the *Family and Medical Leave Act* (FMLA); and, (4) the *Health Insurance Portability and Accountability Act* (HIPAA).

ERISA

ERISA is the primary federal law that governs employee benefits, and while it chiefly applies to private retirement plans, the majority of employee benefit plans are subject to some provisions of the law.[78] ERISA covers welfare plans, such as health insurance, group life insurance, sick pay, long-term disability income, and retirement income.[79] ERISA affords protection to individuals who participate in health benefit plans through private sector employers; provides rights to

74 "Chapter 24, Health Promotion and Disease Management Programs" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 242.
75 "Chapter 25, Mental Health and Substance Abuse Benefits" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 252.
76 See infra *Workplace Wellness Program Grants* section for more information regarding the ACA provisions on wellness. See also Chapter 6 of *An Era of Reform—The Four Pillars*.
77 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 213.
78 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 210.
79 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 210.

Table 12-5: Provisions in the IRC Affecting Employer-Based Health Benefits[80]

IRC Section	Description
104(a)(3)	Exclusion from gross income of the employee for benefits attributable to employee contributions. Available to partners, Subchapter S owners, and self-employed individuals as if they were employees.
105(b)	Exclusion from gross income of the employee for benefits attributable to employer contributions (including benefits received from such plans by partners, Subchapter S owners and self-employed individuals).
105(h)	Any non-fully insured medical reimbursement plan that fails to meet nondiscrimination requirements will result in *Highly Compensated Employees* (HCEs) being taxed on the "*excess reimbursement*."
106(a)	Value of employment-based health accident or health plan provided by the employer is excluded from the employee's gross income. Not available to partners, Subchapter S owners and self-employed individuals (see Sec. 162(1), below).
106(b)	Exclusion for contributions to a *medical savings account* (MSA), but only to the extent allowed under Sec. 220. Also see Sec. 162(1), below.
125(a)	Cafeteria plans provide participants with choices between cash (which may include certain taxable benefits) and qualified nontaxable benefits. Participants who choose nontaxable benefit are not taxed on the cash that could have instead been chosen. If cash is chosen, the participant is taxed on cash. HCEs receive this advantage only if the plan does not discriminate in favor of HCEs.
162(1)	Insurance paid for medical care to partners, Subchapter S owners, and self-employed individuals is deductible from such individuals' gross income (and includable in the income of partners, Subchapter S owners, and self-employed individuals). For taxable year 2002, 70 percent was deductible; and taxable years 2003 and after 100 percent is deductible from gross income. The remaining premiums that are not deductible, may, with all other IRC Sec. 213(d) allowed medical expenses, be itemized on Form 1040 Schedule A, subject to the 7.5 percent limit and overall limits for itemized deductions allowed under IRC Sec. 68.
213(d)	Determines whether the benefit is a medical benefit that can be excluded from gross income.
220	Establishes Archer MSAs, which are tax-favored individual accounts that eligible individuals may establish pursuant to IRC Sec. 220. The *Job Creation and Worker Assistance Act of 2002* extended the demonstration period through December 21, 2003. MSAs were originally enacted as part of the *Health Insurance Portability and Accountability Act of 1996* (HIPAA).
7702B	Long-term care benefits are defined as accident and health insurance and the amounts received under such long-term care benefits are considered as reimbursement under Sec. 213. Favorable tax treatment is not permitted for long-term insurance under IRC Sec. 125.

information; and, institutes a grievance and appeals process for receiving benefits.[81] ERISA does not mandate that an employer offer health benefits, but, rather, regulates those employers who *do* offer benefits, and stipulates generally that employers operate their benefits fairly.[82] Under the terms of ERISA, all employment-based health plans are ERISA plans, excluding government-sponsored plans and certain church plans.[83]

80 26 U.S.C. §§ 104, 105, 106, 125, 162, 213, 220, 7720B (2012).

81 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 213.

82 "ERISA and Healthcare Plan Enforcement" FindLaw (2010) http://employment.findlaw.com/employment/employment-employee-wages-benefits/employment-employee-wages-benefits-health-insurance-top/employment-employee-wages-benefits-erisa.html (Accessed 8/27/10).

83 "Employee Retirement Income Security Act of 1974 (ERISA)" 29 U.S.C. § 1003(b) (2012); "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 210.

The "*preemption clause*," the key provision of ERISA that applies to employment-based health plans, provides that ERISA preempts state laws that "*relate to*" employee-health benefit plans.[84] Section 514(a) states that ERISA "*shall supersede any and all State laws insofar as they may now or hereafter relate to any employee benefit plan.*"[85] An employer that self-funds a health plan is exempt from any state regulation, such as state-mandated benefits, as well as taxes and other assessments that states levy on insurers, which may result in advantages through cost savings for some employers that cover their own employee's health costs.[86]

Recently, the Ninth Circuit Court of Appeals explored the thorny issue regarding from whom beneficiaries could recover for benefits improperly denied under an ERISA plan in *Cyr v. Reliance*. The Court of Appeals held that ERISA plan participants and beneficiaries may "*recover benefits due to him under the terms of his plan*" from parties aside from benefit plans and plan administrators, overturning 26 years of precedent and allowing a beneficiary to sue the insurance company presiding over the plan.[87] Section 1132(a)(1)(B) of ERISA outlines eligible defendants in matters related to an inappropriate denial of benefits, and previous rulings suggest that defendants in such actions are limited to a benefit plan or benefit plan administrators. However, in *Cyr v. Reliance*, the Court emphasized that ERISA "*[Section 1132(a)(3)] makes no mention at all of which parties may be proper defendants—the focus, instead, is on redressing the 'act or practice which violates any provision of [ERISA Title I].'*"[88] The Court found that, as the party in that instance who "*effectively controlled the decision whether to honor or to deny a claim under the program*," Reliance Standard Life Insurance Company could be sued for improper denial of benefits under ERISA.[89] The opinion further noted that other ERISA provisions specifically list those who may be considered eligible defendants.[90] Importantly, the decision may provide precedent for the Ninth Circuit, and other circuits, to allow beneficiaries the opportunity to recover damages from any entity that has responsibility for approving or denying benefits under a health plan, including an employer.[91]

COBRA

Congress passed COBRA in 1986 as an amendment to ERISA.[92] The act requires employers that employ 20 or more workers to offer continued health insurance for a period of time after a "*qualifying event*."[93] A qualifying event for employees may include voluntary termination,

84 "Employee Retirement Income Security Act of 1974 (ERISA)" 29 U.S.C. § 1144(a) (2012); "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 211.
85 "Employee Retirement Income Security Act of 1974 (ERISA)" 29 U.S.C. § 1144(a) (2012).
86 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 211.
87 "Employee Retirement Income Security Act of 1974 (ERISA)" 29 U.S.C. § 1132(a)(1)(B) (2012); "Ninth Circuit Broadens Scope of Entities that Can Be Sued for ERISA Plan Benefits" By Darren Nadel and Kalisha Chorba, Littler Mendelson, P.C., June 2011, http://www.littler.com/publication-press/publication/ninth-circuit-broadens-scope-entities-can-be-sued-erisa-plan-benefits (Accessed 9/26/14).
88 "Cyr v. Reliance Standard Life," No. 07-56869 Opinion (9th Cir. June 22, 2011), p. 8503.
89 "Cyr v. Reliance Standard Life," No. 07-56869 Opinion (9th Cir. June 22, 2011), p. 8499.
90 "Cyr v. Reliance Standard Life," No. 07-56869 Opinion (9th Cir. June 22, 2011), p. 8504.
91 "Ninth Circuit Broadens Scope of Entities that Can Be Sued for ERISA Plan Benefits" By Darren Nadel and Kalisha Chorba, Littler Mendelson, P.C., June 2011, http://www.littler.com/publication-press/publication/ninth-circuit-broadens-scope-entities-can-be-sued-erisa-plan-benefits (Accessed 9/26/14).
92 "Consolidated Omnibus Budget Reconciliation Act of 1985" Pub. L. No. 99-272, § 10002(a), 100 Stat. 227-228 (1986).
93 "Consolidated Omnibus Budget Reconciliation Act of 1985" Pub. L. No. 99-272, § 10002(a), 100 Stat. 227-228 (1986). "Chapter 27, COBRA Continuation of Coverage" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 279.

involuntary termination, or reduced hours.[94] For retired employees, qualifying events include the employer filing for bankruptcy; for dependents of active or retired employees, qualifying events include death, divorce, and the employee's entitlement to Medicare.[95] The act also provides certain retirees and their dependents the right to purchase a continuation of group health plan coverage from their previous employer-based plan.[96]

FMLA

For employees with families, the FMLA mandates that employers with 50 or more employees provide up to 12 weeks of unpaid leave for parents giving birth or adopting a child, or for serious illness of the employee or dependent.[97] The FMLA also stipulates that the employees that elect to utilize this unpaid leave must receive his or her self-only health insurance at a premium equal to that of an active status employee.[98] Updates to the act, which became effective in 2009, include regulations to implement military family leave entitlements.[99]

HIPAA

HIPAA protects the privacy of individuals' health information and dictates how and to whom their information may be disclosed.[100] Under HIPAA, an individual's health information may not be released for any reason other than treatment, payment, or healthcare operations without authorization from the individual.[101] The act applies to healthcare providers, healthcare clearing houses, and health plans, including employer-based health benefits.[102] HIPAA also protects workers with preexisting conditions from discrimination in healthcare coverage and requires the issuance of individual policies for certain workers.[103]

Other Federal Regulations and State Regulations

Other regulations affecting small employer healthcare benefits include: (1) the *Newborns' and Mothers' Health Protection Act* (NMHPA), which requires employer-based health plans to cover minimum hospital length of stay for mothers and newborns; (2) the *Mental Health Parity and Addiction Equity Act* (MHPA), which stipulates that annual mental health benefits be equal to or

94 "Consolidated Omnibus Budget Reconciliation Act of 1985" Pub. L. No. 99-272, § 10002(c)(3), 100 Stat. 224-225 (1986).
95 "Consolidated Omnibus Budget Reconciliation Act of 1985" Pub. L. No. 99-272, § 10002(c)(3), 100 Stat. 224-225 (1986); "Chapter 27, COBRA Continuation of Coverage" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 280.
96 "Consolidated Omnibus Budget Reconciliation Act of 1985" Pub. L. No. 99-272, § 10002(c)(3), 100 Stat. 224-225 (1986); "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 213.
97 "Leave Benefits: Family & Medical Leave" United States Department of Labor, www.dol.gov/dol/topic/benefits-leave/fmla.htm (Accessed 8/27/10).
98 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 213.
99 "The Family and Medical Leave Act of 1993" Federal Register Vol. 73, No. 222 (January 16, 2009), p. 67934.
100 "Definitions" 45 C.F.R. § 160.103 (October 1, 2008); "Health Information Privacy: The Privacy Rule" U.S. Department of Health and Human Services, 2014, http://www.hhs.gov/ocr/privacy/hipaa/administrative/privacyrule/ (Accessed 3/6/15).
101 "Uses and Disclosures of Protected Health Information: General Rules" 45 C.F.R. § 164.502(a) (2015); "Summary of the HIPAA Privacy Rule" Office of Civil Rights, Department of Health and Human Services, May 2003, http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/privacysummary.pdf (Accessed 3/6/15), p. 4.
102 "Summary of the HIPAA Privacy Rule" Office of Civil Rights, Department of Health and Human Services, May 2003, http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/privacysummary.pdf (Accessed 3/6/15), p. 2-3.
103 "Health Insurance Portability and Accountability Act of 1996" Pub. L. No 104-191, § 102, 110 Stat. 1955 (August 21, 1996); "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 213.

above that offered by a group health plan; and, (3) the *Women's Health and Cancer Rights Act* (WHCRA), which mandates employer-based health benefits cover breast reconstruction associated with a mastectomy.[104] Additionally, the *Age Discrimination in Employment Act* (ADEA), the *Americans with Disabilities Act* (ADA), the *Equal Pay Act* (EPA), Title VII of the *Civil Rights Act* (Title VII), and the EEOC have made it illegal for employers to discriminate in providing benefits to workers based on sex, race, age, color, national origin, religion, pregnancy, childbirth, or medical condition.[105] For example, the ADEA, as modified by the *Older Workers Benefits Protection Act* (OWBPA) for employers who employ 20 or more workers, under a bona fide employee benefit plan (which covers employer-sponsored health insurance coverage), "*the actual amount of payment made or cost incurred on behalf of an older worker is no less than that made or incurred on behalf of a younger worker*."[106] This statute has been interpreted to state that employers of 20 or more workers who offer group health plans must offer either of the following to both older and younger workers: (1) the same actual benefits to each class of employees; or, (2) benefits at the same cost to each class of employees.[107]

State regulations of employer-based health benefits vary from state to state. However, all states have a guaranty fund that pays outstanding claims when an insurer fails to pay the outstanding balance on valid claims, and nearly all states assess a premium tax on commercial insurers in the state.[108] Further, most states have state-mandated benefits that legally require insurers to offer certain health services, which tend to increase premiums. While these regulations apply to all commercial insurers, self-funded employers are exempt from them, which can help lower their health benefit costs.[109]

How Small Businesses Can Manage Healthcare Costs

Defined Contribution Plans

In contrast to traditional defined benefit plans, many small businesses have implemented *consumer-driven health benefits*, or *defined contribution health insurance plans*, as a means to reduce the cost of providing health insurance to their employees.[110] The goal of these plans is to model health insurance programs after *defined contribution* pension programs, such as 401(k)s.[111] In contrast to a *defined benefit* system, in which the employer is contractually obliged to contribute the necessary (and potentially varying) premium for a defined health

104 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 214.
105 "Chapter 3, Employee Benefits" EEOC, Compliance Manual, No. 915.003 (October 3, 2000), http://www.eeoc.gov/policy/docs/benefits.html (Accessed 3/27/15).
106 "Prohibition of Age Discrimination" 29 U.S.C. § 623(f)(2)(B)(1) (2012).
107 "Erie County Retirees Association v. County of Erie, Pa." 220 F.3d. 193 (3d. Cir. 2000), cert. denied, 532 U.S. 913 (2001); "Medicare" in "Understanding Health Insurance: A Guide to Billing and Reimbursement, 12th Edition" By Michelle A. Green and JoAnn C. Rowell, Cengage Learning, 2013, p. 496.
108 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 211-212.
109 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 211.
110 "Defined Contribution Health Insurance" By Greg Scandlen, National Center for Policy Analysis, October 26, 2000, https://www.heartland.org/sites/all/modules/custom/heartland_migration/files/pdfs/7662.pdf (Accessed 3/30/15), p. 7.
111 "Defined Contribution Health Insurance" By Greg Scandlen, National Center for Policy Analysis, October 26, 2000, https://www.heartland.org/sites/all/modules/custom/heartland_migration/files/pdfs/7662.pdf (Accessed 3/30/15), p. 12.

insurance package, a *defined contribution* system allows an employer to contribute a defined amount of money and gives the employee the freedom to do with it what he or she chooses.[112]

Employers may choose varying approaches to consumer-driven health benefits, from allowing employees to choose from a variety of health benefit plans, to offering a standard set of benefits with options for combinations of deductibles, co-insurance rates, and other out-of-pocket expenses.[113]

Account-Based Plans

Account-based health plans, a type of consumer-driven health plan, allow employees and employers to contribute money to an account to be used only for medical purposes. These plans give employees more control over funds allocated to their health benefits, which, in theory, incentivizes them to spend the money more responsibly.[114] Types of account-based health plans include *Health Savings Accounts* (HSAs), *Flexible Spending Accounts* (FSAs), *Health Reimbursement Arrangements* (HRAs), and *Medical Savings Accounts* (MSAs).[115]

THE ACA'S IMPACT ON SMALL BUSINESSES

As discussed in the introduction to this chapter, above, the ACA has affected almost every facet of the healthcare industry, from the private insurance industry to taxation. In the face of legal challenges and SCOTUS rulings interpreting many parts of the law, numerous provisions of the act have already been implemented. Additionally, many more provisions are scheduled to be implemented in the coming years, including tax penalties on employers with 50-99 employees who do not offer health coverage, as well as the "*Cadillac tax*" on high-cost health plans. It is important for small businesses to understand the provisions in the ACA, and their cascading effect on their provision of benefits to employees.[116]

SPECIFIC HEALTHCARE LEGISLATION PROVISIONS AFFECTING SMALL BUSINESSES

Small Business Healthcare Affordability Tax Credits

The provision of the 2010 healthcare reform legislation that may have the largest effect on small businesses is the offering of tax credits by the state and federal governments. As discussed in Chapter 6 of *An Era of Reform—The Four Pillars*, an eligible small employer who purchases

112 "Defined Contribution: From Managed Care to Patient-Managed Care" By E. Haavi Morreim, Cato Journal, Vol. 22, No. 1 (Spring/ Summer 2002), p. 110-111.
113 "Chapter 20, Health Benefits: Overview" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 211.
114 "Chapter 29, Managing Healthcare Costs" Employee Benefit Research Institute, Fundamentals of Employee Benefit Programs, 6th Ed. (2009), p. 309.
115 For a more detailed discussion of account-based health plans, see Chapter 2 of *An Era of Reform—The Four Pillars*.
116 For a comprehensive review of ACA provisions and their implementation dates, see Chapter 6 in *An Era of Reform—The Four Pillars*.

health insurance for his or her employees can receive a tax credit for amounts spent for health insurance coverage for employees.[117] An eligible small employer must meet the following conditions: (1) the employer must have no more than 25 *full-time equivalent* (FTE) employees for the taxable year; (2) the average wages paid by the employer during the taxable year does not exceed $50,000 (multiplied by a cost of living adjustment); and, (3) the employer must pay at least half of the premium cost.[118] To calculate the number of FTE employees in the context of the small business tax credit for health coverage, divide the "*total number of hours of service for which wages were paid by employer to employees...during the taxable year*" by 2,080.[119]

From 2010 to 2013, eligible small employers providing healthcare coverage for employees were eligible to receive a tax credit up to 35 percent of the employer's contribution towards the employee's health insurance premium if the employer contributed at least half of the total premium cost or half of the benchmark premium.[120] To avoid an incentive to choose high-cost plans, the employer's eligible contribution was limited to the average cost of health insurance for small businesses in that state.[121]

In 2014, the applicable tax credit percentage increased to 50 percent, for up to two years, for eligible small employers who purchase qualified health plans through a *Small Business Health Options Program* (SHOP Exchange), or through an insurance agent if the SHOP exchange has not yet been implemented in the state.[122] Employers with 10 or fewer employees and average wages of less than $25,000 will receive 100% of the credit.[123] Tax-exempt organizations of the same size are also eligible for reduced small business tax credits, equal to 25% of their contribution to employee premiums from 2010 through 2013.[124] Currently, tax-exempt organizations can claim a credit equal to 35% of their contributions to employee premiums.[125]

Wide variances exist in estimates of entities eligible for the credit, with the GAO noting a range between 1.4 million employers eligible to approximately 4 million employers eligible.[126]

Small Firm Penalty Exemption

On February 12, 2014, the *Department of Treasury* published a final rule stating that employers with 100 or more employees need to offer coverage to 70 percent of employees in 2015, but will need to offer coverage to 95 percent of employees starting in 2016.[127] Additionally, the final rule

117 "Employee Health Insurance Expenses of Small Employers" 26 U.S.C. § 45R (2010); see also "Healthcare Reform Legislation: Provisions Affecting Employer-Sponsored Group Health Plans" Sonnenschein Nath & Rosenthal, LLP, April 14, 2010, p. 3.
118 "Employee Health Insurance Expenses of Small Employers" 26 U.S.C. § 45R (2010).
119 "Employee Health Insurance Expenses of Small Employers" 26 U.S.C. § 45R (2010).
120 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, 124 Stat. 237-241 (March 23, 2010).
121 "Additional Background on the Small Business Healthcare Tax Credit" United States Treasury, http://www.treasury.gov/press-center/press-releases/Documents/additional%20background%20on%20the%20small%20business%20health%20care%20tax%20credit.pdf (Accessed 3/27/15).
122 "Employee Health Insurance Expenses of Small Employers" 26 U.S.C. § 45R(g)(2) (2010); "Summary of New Health Reform Law" Kaiser Family Foundation, April 21, 2010, www.kff.org/healthreform/upload/8061.pdf (Accessed 9/18/10).
123 "Employee Health Insurance Expenses of Small Employers" 26 U.S.C. § 45R(c)(1) (2010);"Summary of New Health Reform Law" Kaiser Family Foundation, April 21, 2010, www.kff.org/healthreform/upload/8061.pdf (Accessed 9/18/10).
124 "Additional Background on the Small Business Healthcare Tax Credit" United States Treasury, www.ustreas.gov/press/releases/reports/additional background on the small business healthcare tax credit.pdf (Accessed 10/13/10).
125 "Employee Health Insurance Expenses of Small Employers" 26 U.S.C. § 45R(b) (2010).
126 The Government Accountability Office (GAO) noted that differing groups noted different estimates of who would be eligible for the credit, largely differing on whether or not to include nonprofits in their estimations. "Small Employer Health Tax Credit: Factors Contributing to Low Use and Complexity" U.S. Government Accountability Office, GAO 12-549, May 2012, http://www.gao.gov/assets/600/590832.pdf (Accessed 8/13/15).
127 "Shared Responsibility for Employers Regarding Health Coverage; Final Rule" 79 Fed. Reg. 8544, February 12, 2014.

provides that mid-sized employers with 50-99 employees now have until 2016 – two years later than originally envisioned – until they face a penalty for not complying with the coverage requirements.[128]

Employers with 50 or fewer employees are exempt from penalties assessed for failure to offer health coverage to FTEs, or for providing unaffordable coverage to FTEs.[129] Employers with more than 200 employers are required to automatically enroll employees into health insurance plans offered by the employer; however, the employee may opt out of the plan.[130]

Small Business Health Options Program (SHOP Exchange)

As part of the ACA's provisions on insurance exchanges, state and federal exchanges were also mandated to include a SHOP Exchange, a specific marketplace for health insurance offered by small businesses. Online enrollment for the federal SHOP exchange began in November 2014, as a state-based marketplace for all individual policies sold by private insurers.[131] Online enrollment in the federal SHOP exchange was originally set to be implemented in October 2013, but the rollout was delayed due to technical problems with the website.[132] In October 2014, small business employers in five states – Delaware, Illinois, Ohio, Missouri, and New Jersey – were able to register on the SHOP exchanges.[133] Currently, business owners in all 50 states are able to explore plans on the federal SHOP exchange. Plans offered through the SHOP exchanges will have the *essential health benefits package* with no lifetime or annual limits, and will vary by the degree of cost-sharing.[134] Under the ACA, "*essential health benefits*" include:

(1) "*Ambulatory patient services;*
(2) *Emergency services;*
(3) *Hospitalization;*
(4) *Maternity and newborn care;*
(5) *Mental health and substance use disorder services, including behavioral health treatment;*
(6) *Prescription drugs;*
(7) *Rehabilitative and habilitative services and devices;*
(8) *Laboratory services;*
(9) *Preventive and wellness services and chronic disease management;*
(10) *Pediatric services, including oral and vision care*."[135]

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128 "Shared Responsibility for Employers Regarding Health Coverage; Final Rule" 79 Fed. Reg. 8544, Department of the Treasury, February 12, 2014.
129 "Shared Responsibility for Employers Regarding Health Coverage" 26 U.S.C. § 4980H(c)(2)(A) (2010).
130 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, § 1511, 124 Stat. 252 (March 23, 2010).
131 "Health Insurance Reform: Frequently Asked Questions" National Association of Realtors Governmental Affairs Division, www.realtor.org/small_business_health_coverage.nsf/Pages/health_ref_faq_exchange?OpenDocument (Accessed 3/4/14); "Online Health Law Sign-Up Is Delayed for Small Business" Robert Pear, New York Times, November 27, 2013, http://www.nytimes.com/2013/11/28/us/politics/years-delay-expected-in-major-element-of-health-law.html?hp&_r=1& (Accessed 3/4/14).
132 "After a Slow Start, Federal Small Business Health Insurance Marketplace Offers New and Improved Functions" By Kevin Lucia, Justin Giovannelli and Sean Miskell, The Commonwealth Fund Blog, February 19, 2015, http://www.commonwealthfund.org/publications/blog/2015/feb/federal-shop-marketplace-offers-new-and-improved-functions (Accessed 3/30/15).
133 "Small Businesses in These Five States to Get Early Access to New Healthcare.gov Portal" By J.D. Harrison, The Washington Post, September 3, 2014, http://www.washingtonpost.com/business/on-small-business/small-businesses-in-these-five-states-to-get-early-access-to-new-healthcaregov-portal/2014/09/03/24500924-3304-11e4-a723-fa3895a25d02_story.html (Accessed 9/12/14).
134 "Small Businesses and The Affordable Care Act of 2010" Sarah R. Collins, Karen Davis, Jennifer L. Nicholson, and Kristof Stremikis, The Commonwealth Fund, September 2010.
135 "Patient Protection and Affordable Care Act" Pub. L. No. 111-148, §1302(b), 124 Stat. 119, 163-164 (March 23, 2010).

However, a group or individual health plan offering *non-essential health benefits* may impose lifetime or annual limits for those specific benefits. [136]

Small employers are able to choose from four different levels of cost-sharing, which cover different percentages of an enrollee's medical costs: *bronze*, which covers 60 percent of medical costs; *silver*, which covers 70 percent of medical costs; *gold*, which covers 80 percent of medical costs; and, *platinum*, which covers 90 percent of medical costs.[137] For all plans, out of pocket costs will be limited to $6,600 for single policies, or $13,200 for family policies, and deductibles will be limited to $2,050 for a single policy, or $4,100 for a family policy.[138]

Cafeteria Plans

The ACA also establishes simple cafeteria plans for small businesses. A "*cafeteria plan*" is a health insurance plan characterized by two requirements: (1) that "*all participants are employees*"; and, (2) that participants "*may choose among 2 or more benefits consisting of cash and qualified benefits*."[139] These plans ease participation restrictions so that small businesses are able to provide tax-free benefits to their employees. Employers who make contributions for employees under a simple cafeteria plan are also exempted from pension plan non-discrimination requirements applicable to highly compensated and key employees.[140] These provisions have been designed to help small businesses provide affordable healthcare benefits to their employees efficiently and effectively.[141] However, employers who pay premiums pursuant to a salary reduction arrangement cannot treat those premium payments as an employer contribution in an ACA cafeteria plan.[142]

Other Provisions

Internet Portal

The ACA provides for an internet portal with information about affordable and comprehensive coverage options and the means to enroll in the various health plans. The portal, *HealthCare.gov*, includes information on "*eligibility, availability, premium rates, cost sharing, and the percentage of total premium revenues spent on health care, rather than administrative expenses, by the issuer*."[143] The SHOP exchange, located on *HealthCare.gov*, is specifically available to small businesses and contains information on coverage options designed for them.

136 "Coverage Improvements" in "Employer's Guide to Health Care Reform, 2015 Edition" New York, NY: Wolters Kluwer, 2015, p. 6-7.
137 "Small Businesses and The Affordable Care Act of 2010" By Sarah R. Collins, Karen Davis, Jennifer L. Nicholson, and Kristof Stremikis, The Commonwealth Fund, September 2010.
138 These figures were calculated based off a premium adjustment of 4.21%. "Fact Sheets: HHS 2015 Health Policy Standards Fact Sheet" Centers for Medicare & Medicaid Services, Mar. 5, 2014, http://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2014-Fact-sheets-items/2014-03-05-2.html (Accessed 10/1/14).
139 "Cafeteria Plans" 26 U.S.C. § 125(d)(1) (2012).
140 "The Patient Protection and Affordable Care Act: Section-by-Section Analysis with Changes Made by Title X and Reconciliation included within Titles I-IX" By Democratic Policy Committee, http://dpc.senate.gov/healthreformbill/healthbill53.pdf (Accessed 8/20/10), p. 61.
141 "The Patient Protection and Affordable Care Act: Section-by-Section Analysis with Changes Made by Title X and Reconciliation included within Titles I-IX" By Democratic Policy Committee, http://dpc.senate.gov/healthreformbill/healthbill53.pdf (Accessed 8/20/10), p. 61.
142 "Strategic Decisions for Employers" in "Employer's Guide to Health Care Reform, 2015 Edition" New York, NY: Wolters Kluwer, 2015, p. 5-12.
143 "The Patient Protection and Affordable Care Act: Section-by-Section Analysis with Changes Made by Title X and Reconciliation included within Titles I-IX" By Democratic Policy Committee, http://dpc.senate.gov/healthreformbill/healthbill53.pdf (Accessed 8/20/10), p. 3.

Workplace Wellness Program Grants

Because the ACA is centered on improving quality of care and preventive measures, the law authorizes an appropriation of $200 million to give employees of small businesses the resources to implement comprehensive workplace wellness programs.[144] Funding is available to employers with less than 100 employees that do not already have a workplace wellness program in place.[145] Small business wellness programs generally address the following topics: (1) health awareness initiatives; (2) efforts to maximize employee engagement; (3) initiatives to change unhealthy behaviors and lifestyle choices; and, (4) supportive environment efforts.[146]

Small Business Representation on Workforce Committee

Section 5101 of the ACA establishes a national commission tasked with reviewing healthcare workforce and projected workforce needs that will provide Congress with unbiased information about how to align federal healthcare workforce resources with national needs.[147] The provision requires small business representation on the commission in order to gather specific information about the small business workforce.[148]

Tax Regulations

The ACA also contains extensive new tax provisions, introduced in Chapters 3 and 6 of *An Era of Reform—The Four Pillars*, which are applicable to both individuals and employers. First, individuals who fail to maintain the *minimum essential coverage* required by the *individual mandate* will be subject to the taxes previously discussed in Chapter 6 of *An Era of Reform—The Four Pillars*. All U.S. citizens, including children and senior citizens, are subject to the *individual mandate*, along with permanent residents and foreign nationals who qualify as resident aliens for tax purposes.[149] Notably for seniors, Medicare Part A and Medicare Part C satisfy the *individual mandate* requirements.[150]

Other tax provisions include a 40 percent excise tax on high-cost plans, which will be assessed on plans with a total cost, including employee contributions, more than $10,200 for individual coverage, or $27,500 for family coverage, effective in 2018.[151] The ACA's 40 percent excise tax provision, known commonly as the "*Cadillac tax*," applies the rate of tax to the excess amount of coverage over the above-stated limits applicable for individual or family coverage.[152] The tax percentage will be adjusted for age, gender, and high-risk professions, and the tax is to be paid

144 "Patient Protection and Affordable Care Act" Pub. L. No. 111-148, §10408, 124 Stat.977-978 (March 23, 2010).
145 "Patient Protection and Affordable Care Act" Pub. L. No. 111-148, §10408, 124 Stat.977-978 (March 23, 2010).
146 "Healthcare Reform Update: Grants for Workplace Wellness Programs" Business and Legal Resources, http://hr.blr.com/HR-news/Benefits-Leave/Employee-Wellness/Healthcare-Reform-Update-Grants-for-Workplace-Well/ (Accessed 8/20/10).
147 "Patient Protection and Affordable Care Act" Pub. L. No. 111-148, 124 Stat. 119, 592-599 (March 23, 2010).
148 "The Patient Protection and Affordable Care Act: Section-by-Section Analysis with Changes Made by Title X and Reconciliation included within Titles I-IX" Democratic Policy Committee, http://dpc.senate.gov/healthreformbill/healthbill53.pdf (Accessed 8/20/10), p. 41.
149 "Determine If You are Subject to the Individual Shared Responsibility Provision" Internal Revenue Service, August 14, 2015, http://www.irs.gov/Affordable-Care-Act/Individuals-and-Families/Determine-If-You-Are-Subject-to-the-Individual-Shared-Responsibility-Provision (Accessed 8/17/15).
150 "Determine If You are Subject to the Individual Shared Responsibility Provision" Internal Revenue Service, August 14, 2015, http://www.irs.gov/Affordable-Care-Act/Individuals-and-Families/Determine-If-You-Are-Subject-to-the-Individual-Shared-Responsibility-Provision (Accessed 8/17/15).
151 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, § 9001, 124 Stat. 119, 848 (March 23, 2010). "Tax Provisions of in the Healthcare Act" Journal of Accountancy, March 22, 2010, www.journalofaccountancy.com/Web/20102724.htm (Accessed 8/18/10).
152 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, 124 Stat. 119, 848 (March 23, 2010).

by the coverage provider, e.g., the health insurance issuer, employer, or health plan administrator.[153] Even though implementation does not begin until 2018, employers are already planning for the tax. Employers fear that the tax, which was originally designed to tax health insurance policies only obtainable by the wealthiest nationally, will cover over half the health plans in the U.S. due to rising health expenditures.[154] In response, *Forbes* has reported many businesses are instituting "*spousal surcharges*" in an attempt to have the spouse of an employee utilize health insurance from his or her own employer, thereby limiting the number of policies subject to the tax.[155] Additionally, public and private employers have engaged in lobbying efforts to repeal the "*Cadillac*" tax.[156] Unlike many other provisions in the ACA, the push for repeal of this provision has bipartisan support in Congress.[157]

Table 12-6 highlights some of the major ACA tax provisions, including those discussed in previous sections.

CONCLUSION

The evolution of U.S. healthcare delivery, from the implementation of Social Security (in 1935) and Medicare and Medicaid (in 1965), to the 2010 implementation of the ACA, has had a significant impact on small businesses. It is important for these small enterprises, and the CPAs and professional advisors that advise them, to maintain a current awareness of the various aspects involved in offering health benefits to employees and the laws and taxes that affect those benefits. Small businesses have several options when making decisions related to providing employee health benefits, ranging from traditional plans like HMOs and PPOs, to newer plans, such as HSAs and HRAs, which are directed at giving employees more control over their own health insurance. The tax provisions contained in the ACA associated with employer-based health benefits are also important to small businesses as they make expenses on health benefits 100 percent tax deductible. Maintaining a current understanding of existing healthcare legislation, such as ERISA and COBRA, as well as the ACA, should be a priority for small and mid-size businesses. Because smaller enterprises generally lack the resources of larger businesses, employers should be aware of any cost-saving strategies associated with offering health benefits, such as offering consumer-driven health benefits and recognizing provisions in contracts that can add unnecessary costs. As such, these employers may greatly benefit from the advice of an accountant in structuring their employee benefit plans.

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153 "The Patient Protection and Affordable Care Act" Pub. L. No. 111-148, 124 Stat. 119, 848 (March 23, 2010).

154 "Cadillac Tax: A Portion of Obamacare Both Parties Hate" By Kimberly Leonard, U.S. News and World Report, August 14, 2015, http://www.usnews.com/news/articles/2015/08/14/cadillac-tax-to-face-congressional-scrutiny (Accessed 8/17/15).

155 "How Obamacare Adds $100 A Month To Your Spouse's Coverage" By Bruce Japsen, Forbes, August 16, 2015, http://www.forbes.com/sites/brucejapsen/2015/08/16/how-obamacare-adds-100-a-month-to-your-spouses-coverage/ (Accessed 8/17/15).

156 "A United Front Against the Cadillac Tax" By Mike Nesper, Employee Benefit News, July 29, 2015, http://ebn.benefitnews.com/news/health-care-reform/a-united-front-against-the-cadillac-tax-2746962-1.html?utm_medium=email&ET=ebnbenefitnews%3Ae4853779%3A2502814a%3A&utm_campaign=ebn_new_health_care-jul%2030%202015&utm_source=newsletter&st=email (Accessed 8/7/15).

157 "A United Front Against the Cadillac Tax" By Mike Nesper, Employee Benefit News, July 29, 2015, http://ebn.benefitnews.com/news/health-care-reform/a-united-front-against-the-cadillac-tax-2746962-1.html?utm_medium=email&ET=ebnbenefitnews%3Ae4853779%3A2502814a%3A&utm_campaign=ebn_new_health_care-jul%2030%202015&utm_source=newsletter&st=email (Accessed 8/7/15); "Cadillac Tax: A Portion of Obamacare Both Parties Hate" By Kimberly Leonard, U.S. News and World Report, August 14, 2015, http://www.usnews.com/news/articles/2015/08/14/cadillac-tax-to-face-congressional-scrutiny (Accessed 8/17/15).

Table 12-6: Important Tax Provisions of the ACA[158]

Effective Year	Provision	Description
2010	Excise Tax on Indoor Tanning Services	Imposed a 10 percent tax on amount paid for indoor tanning services.
2010	Small Business Tax Credit	See *Specific Healthcare Legislation Provisions Affecting Small Businesses* section, above.
2011	Tax on Over-the-Counter Drugs	Over-the-counter drugs not prescribed by a physician are excluded from being reimbursed through an HRA or health FSA and from being reimbursed on a tax free basis through an HSA or Archer Medical Savings Account.
2011	Additional Tax on Distributions from HSAs and Archer MSAs not used for Qualified Medical Expenses	Increased the additional tax for HSA withdrawals prior to age 65 that are used for purposes other than qualified medical expenses to 20% (from 10% for HSAs and 15% for Archer MSAs).
2011	Imposition of Annual Fee on Branded Prescription Pharmaceutical Manufacturers and Importers	Imposed new annual fees on the pharmaceutical manufacturing sector.
2012	Establishment of Simple Cafeteria Plans for Small Businesses	Established Simple Cafeteria Plans that ease participation restrictions so that small businesses can provide tax-free benefits to their employees.
2013	Inflation Adjustment of Limitation on FSA Contribution	Limited the amount of contributions to a FSA for medical expenses to $2,500 per year, increased annually by the cost of living adjustment.
2013	Imposition of Excise Tax on Medical Device Manufacturers and Importers	Imposed an excise tax of 2.3 percent on the sale of medical devices by manufacturers and importers.
2013	Eliminate Deduction for Expenses Allocable to Medicare Part D	Removed the deduction for the subsidy for employers who maintain prescription drug plans for their Medicare Part D eligible retirees.
2013	Modification of Itemized Deduction for Medical Expenses	Increased the adjusted gross income threshold for claiming the itemized deduction for medical expenses from 7.5% to 10% (individuals 65 and older exempt until 2016).
2013	Additional Hospital Insurance (HI) Tax for High Wage Workers	Increased the Medicare Part A (HI) tax rate on wages by 0.9% on earnings over $200,000 for individual taxpayers and $250,000 for married couples filing jointly with incomes and imposes a 3.8% tax on unearned income for higher-income taxpayers.
2014	Requirement to Maintain *Minimum Essential Coverage*	Imposes tax on individuals without qualifying coverage of the greater of $95 per year or 1% of household income; will increase to $325 or 2 percent of income in 2015; and, $695 or 2.5 percent of income in 2016 and beyond.
2014	Refundable Tax Credit Providing Premium Assistance for Coverage Under a Qualified Health Plan	See *Specific Healthcare Legislation Provisions Affecting Small Businesses* section, above.
2015	Responsibility for Large Employers	Will impose tax penalties on employers with 100 or more full-time employees. See *Specific Healthcare Legislation Provisions Affecting Small Businesses* section, above.
2016	Responsibility for Mid-Size Employers	Will impose tax penalties on employers with 50-99 full-time employees. See *Specific Healthcare Legislation Provisions Affecting Small Businesses* section, above.
2018	High-Cost Plan Excise Tax	Will impose an excise tax on insurers of employer-sponsored health plans with aggregate values that exceed $10,200 for individual coverage and $27,500 for family coverage. The tax is equal to 40% of the value that exceeds the threshold amounts and is imposed on the issuer of the health insurance policy.

There should be little doubt that the ACA has had, and will continue to have, a significant impact on healthcare and small and mid-sized enterprises, with both intended and unintended

158 See generally "Patient Protection and Affordable Care Act" Pub. L. No. 111-148, §6402(a), 124 Stat. 119 (March 23, 2010).

consequences. The tax credits given to employers of fewer than 25 employees, and the exemption for employers of fewer than 50 employees from offering mandatory health benefits, demonstrate just two ways in which the ACA provides a break for small businesses. While the ACA may give advantages to small businesses in the marketplace by creating more affordable health plans offered by associations or SHOP exchanges, resulting in economic benefits associated with employing a healthy workforce, the various provisions of the ACA may also impose significant risks and expenses such as excise taxes and penalties. Ultimately, the ACA may afford small businesses a more level playing field to provide high value, high quality health benefits to their employees. Accountants must be aware of these opportunities, and challenges, when advising their small business clients.

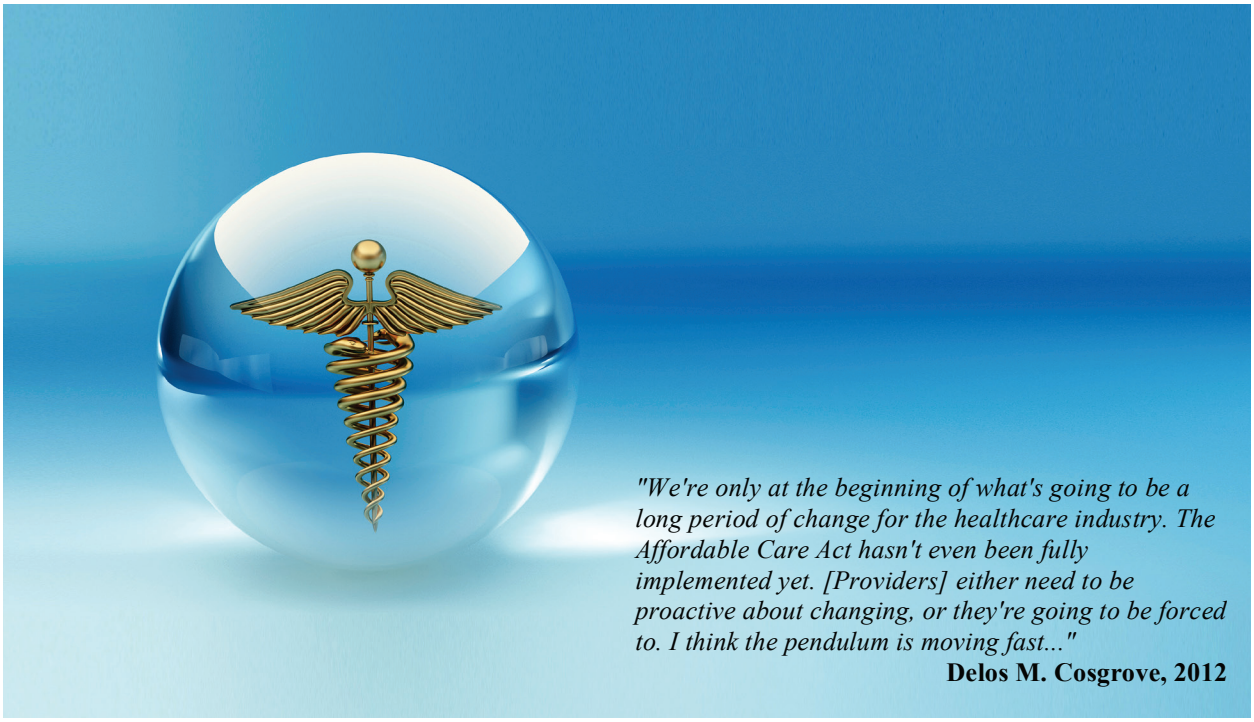
Key Sources

Key Source	Description	Citation	Website
The Henry J. Kaiser Family Foundation	The Kaiser Family Foundation provides data and insight on numerous healthcare issues, including employer benefits.	"History & Mission" The Henry J. Kaiser Family Foundation, 2015, http://kff.org/history-and-mission/ (Accessed 8/13/15).	http://kff.org/
Healthcare.gov	Healthcare.gov serves as the portal for many health insurance exchanges, including the SHOP exchange, and provides basic answers to questions relating to the ACA.	"Healthcare.gov" Centers for Medicare & Medicaid Services, 2015, https://www.healthcare.gov/ (Accessed 8/13/15).	https://www.healthcare.gov/
Internal Revenue Service (IRS)	The IRS is the U.S. government's principal agency for collecting tax revenue and administering the tax code.	"The Agency, its Mission and Statutory Authority" Internal Reveue Service, 2015, http://www.irs.gov/uac/The-Agency,-its-Mission-and-Statutory-Authority (Accessed 8/13/15).	http://www.irs.gov/
United States Department of Health and Human Services (HHS)	"The Department of Health and Human Services (HHS) is the United States government's principal agency for protecting the health of all Americans and providing essential human services." HHS has eleven agencies, among which are the Centers for Medicare and Medicaid Services (CMS), Indian Health Services (IHS), the Office of the Inspector General (OIG), and the National Institutes of Health (NIH).	"About HHS," Department of Health and Human Services, 2015, www.hhs.gov/about/ (Accessed 4/1/15).	www.hhs.gov
United States Department of Labor	The DOL website includes information regarding employer sponsored health insurance plans and the laws that govern them, such as the Employment Retirement Income Security Act.	"Health Plans and Benefits," United States Department of Labor, 2015, http://www.dol.gov/dol/topic/health-plans/index.htm (Accessed 4/1/15).	www.dol.gov

Associations

Type of Organization	Association	Description	Citation	Contact Information
Federal	American Institute of Certified Public Accountants (AICPA)	"Founded in 1887, the AICPA represents the CPA profession nationally regarding rule-making and standard-setting, and serves as an advocate before legislative bodies, public interest groups and other professional organizations. The AICPA develops standards for audits of private companies and other services by CPAs; provides educational guidance materials to its members; develops and grades the Uniform CPA Examination; and monitors and enforces compliance with the profession's technical and ethical standards."	"AICPA Mission and History" AICPA, 2015, http://www.aicpa.org/ABOUT/MISSIONANDHISTORY/Pages/MissionHistory.aspx (Accessed 8/17/15).	American Institute of Certified Public Accountants 1455 Pennsylvania Ave., NW Washington, D.C. 20004 Phone: 202-737-6600 Fax: 202-638-4512 www.aicpa.org
Global	Society for Human Resource Management (SHRM)	"Founded in 1948, the Society for Human Resource Management (SHRM) is the world's largest HR membership organization devoted to human resource management. Representing more than 275,000 members in over 160 countries, the Society is the leading provider of resources to serve the needs of HR professionals and advance the professional practice of human resource management."	"About the Society for Human Resource Management" SHRM, 2015, http://www.shrm.org/about/pages/default.aspx (Accessed 8/17/15).	Society for Human Resource Management 1800 Duke Street Alexandria, VA 22314 Phone: (800) 283-7476 Fax: (703) 535-6490 www.shrm.org

Epilogue



The year 2015 has seen momentous change in the U.S. healthcare industry, filled with many significant developments spanning the *Four Pillars of the Healthcare Environment*, i.e., the delivery environment related to *Regulatory*, *Reimbursement*, *Technology*, and *Competitive* issues. Perhaps most notably, the *Patient Protection and Affordable Care Act* (ACA)[1] withstood yet another substantial challenge posed by *David King et al. v. Sylvia Mathews Burwell et al.* (King v. Burwell),[2] which followed closely on the heels of *National Federation of Independent Business et al. v. Kathleen Sebelius et al.*(NFIB v. Sebelius).[3] In *King v. Burwell*, the petitioners argued that the ACA's tax credits for individuals enrolling in health insurance utilizing *Health Insurance Exchanges* could only be distributed to those individuals who enrolled using a state-established Exchange.[4] However, on June 25, 2015, the U.S. Supreme Court (SCOTUS) decreed that tax credits could also be legally distributed to individuals who enrolled through a federally-established Exchange, thereby preserving the eligibility of health insurance purchasers in the 34 states that currently have not established a state Exchange, and thereby, by default, utilize a

1 Popularly referred to as "Obamacare."
2 See Chapter 6 of *An Era of Reform—The Four Pillars* for further discussion regarding the King v. Burwell case.
3 "National Federation of Independent Business et al. v. Sebelius et al." 132 S. Ct. 2566, 2600 (2012); See Chapter 6 of *An Era of Reform—The Four Pillars* for further discussion regarding the NFIB v. Sebelius case.
4 "David King et al. v. Sylvia Mathews Burwell et al." Case No. 14-114 (SCOTUS 2015), Brief for Petitioners, p. 6.

federally-established Exchange.[5] Despite these victories at the SCOTUS, many challenges still remain for the ACA, both judicially and politically.[6]

Further still, after years of the *sustainable growth rate* (SGR)[7] causing significant strife in the healthcare industry, and annual congressional efforts to stave off impending cuts to physician reimbursement at the last moment, akin to "*Horatius at the bridge,*"[8] Congress repealed the SGR with the passage of the *Medicare Access and CHIP Reauthorization Act of 2015* (MACRA).[9] MACRA will combine three incentive programs (the Physicians Quality Reporting System, Value-Based Modifier, and Meaningful Use Program) into a single *Merit Based Incentive Payment System* (MIPS), as well as provide pre-determined updates to the Medicare Physician Fee Schedule (MPFS).[10] However, physician payments will likely stagnate under the schedule mandated by MACRA, as updates to the MPFS conversion factor are set to grow under 1% annually.[11] Accordingly, physician practices will likely need to become more efficient, as well as achieve bonus payments under the MIPS, in order to remain viable.

However, even with the passage of MACRA (which also expanded funding for the *Children's Health Insurance Program*[12]), and the successful defense of the ACA's health insurance tax credits in *King v. Burwell*, many hospitals in states that have not yet expanded Medicaid[13] are continuing to struggle to stay afloat, while many hospitals in states that have expanded Medicaid thrive.[14] A study published by the Kaiser Family Foundation found that Ascension hospitals in states that expanded Medicaid decreased charity care by 40% between 2013 and 2014, while Ascension hospitals in non-expansion states decreased charity care by only 6% over the same period.[15] Similarly, Ascension hospitals in Medicaid expansion states experienced a 32.3% decrease in the number of uninsured patients between 2013 and 2014, as compared to only a 4.4% decrease at Ascension hospitals in non-expansion states over the same period.[16]

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5 "King et al. v. Burwell, Secretary of Health and Human Services, et al" No. 14-114 (U.S. June 25, 2015), Slip Opinion, p. 21;"Supreme Court Saves Obamacare" By Brett Logiurato, June 25, 2015, http://www.businessinsider.com/king-v-burwell-supreme-court-decision-2015-6 (Accessed 7/22/15).

6 "Legal Challenges Remain for Health Law" By Robert Pear, The New York Times, June 26, 2015, http://www.nytimes.com/2015/06/27/us/legal-challenges-remain-for-health-law.html?_r=0 (Accessed 7/7/15).

7 Based on inflation, Medicare enrollment, growth of GDP, and regulatory developments, the SGR represented a spending target set for total annual expenditures under Medicare on Part B services, and annual adjustments were made to the MPFS based on whether actual spending came in above or below the target. "The Sustainable Growth Rate Formula for Setting Medicare's Physician Payment Rates" Congressional Budget Office, Economic and Budget Issue Brief, September 6, 2006, http://www.cbo.gov/ftpdocs/75xx/doc7542/09-07-SGR-brief.pdf (Accessed 10/09/09); See Chapter 2 of *An Era of Reform—The Four Pillars* for further discussion regarding the SGR.

8 Horatius Cocles was a Roman hero who defended the Sublician Bridge against invaders, giving the Romans the requisite time to demolish the bridge, thereby narrowly foiling the Etruscan invasion of Rome. "Horatious Cocles" Encyclopaedia Britannica, http://www.britannica.com/topic/Horatius-Cocles (Accessed 7/27/2015).

9 "Medicare Access and CHIP Reauthorization Act of 2015" Pub. L. No. 114-10, 129 Stat. 87 (April 16, 2015).

10 "Medicare Access and CHIP Reauthorization Act of 2015" Pub. L. No. 114-10, 129 Stat. 87, 89, 91 (April 16, 2015); "Summary: H.R.2 – 114th Congress (2015-2016)" Congress.gov, https://www.congress.gov/bill/114thcongress/housebill/2 (Accessed 4/22/15).

11 "Medicare Access and CHIP Reauthorization Act of 2015" Pub. L. No. 114-10, 129 Stat. 87, 89-90 (April 16, 2015).

12 "Medicare Access and CHIP Reauthorization Act of 2015" Pub. L. No. 114-10, 129 Stat. 87, 154 (April 16, 2015).

13 Following the SCOTUS decision that invalidated the ACA provisions that mandated states to expand their Medicaid programs or lose all matching federal funds, states were given the choice of whether to: (1) opt into the Medicaid expansion in exchange for significant federal assistance; or, (2) maintain their Medicaid program's status quo, which could deny access to potentially millions of poor and uninsured constituents. "National Federation of Independent Business et al. v. Sebelius et al." 132 S. Ct. 2566, 2604 (2012); See Chapter 6 of *An Era of Reform—The Four Pillars* for further discussion regarding the NFIB v. Sebelius case.

14 "Some public hospitals win, others lose with Obamacare" By Robin Respaut, Reuters, July 23, 2015, http://www.reuters.com/article/2015/07/23/us-usa-hospital-medicaid-insight-idUSKCN0PX0CY20150723 (Accessed 7/27/15).

15 "How are Hospitals Faring under the Affordable Care Act? Early Experiences from Ascension Health" By Peter Cunningham, et al., The Kaiser Commission on Medicaid and the Uninsured, April 2015, http://files.kff.org/attachment/issue-brief-how-are-hospitals-faring-under-the-affordable-care-act-early-experiences-from-ascension-health (Accessed 7/27/15), p. 2.

16 "How are Hospitals Faring under the Affordable Care Act? Early Experiences from Ascension Health" By Peter Cunningham, et al., The Kaiser Commission on Medicaid and the Uninsured, April 2015, http://files.kff.org/attachment/issue-brief-how-are-hospitals-faring-under-the-affordable-care-act-early-experiences-from-ascension-health (Accessed 7/27/15), p. 1.

Illustratively, the bad debt of uncompensated care at Grady Health System in Georgia (where Medicaid was not expanded) rose by $127 million between 2013 and 2014, while uncompensated charity care dropped by $158 million at Cook County Health in Illinois (where Medicaid was expanded) over the same period.[17] This wide disparity in uninsured and uncompensated care may continue to impose significant pressure on the bottom lines of hospitals in non-expansion states.

While Medicaid enrollment may remain stagnant in non-expansion states, the *Health Insurance Exchanges*[18] helped to enroll approximately 11.4 million people in health insurance plans, many of whom became insured for the first time.[19] Several of these Exchanges, including the federal Exchange, were initially plagued by frustrating technical glitches;[20] however, many states that run state-established Exchanges are considering turning their Exchanges over to the federal government, due to "balky technology and expensive customer call centers—and tepid enrollment numbers."[21] Some state-established Exchanges are considering raising fees on insurers, to the latter's perturbation, due in part to a larger number of unhealthy people registering for insurance on Exchanges than originally anticipated.[22]

This large population of unhealthy people is expected to cause a spike in insurance costs, which will likely be passed on to consumers, with some plans expected to raise premiums by 30% or more.[23] Perhaps in response to these market forces (in an attempt to gain a healthier insured pool), the aging U.S. patient population (as the elderly population typically has a greater per capita utilization of healthcare services when compared with younger populations),[24] as well as the increased transparency and insurance requirements of the ACA, many insurers are seeking to consolidate.[25] Indeed, several major insurers announced plans to merge in June and July of 2015, such as Anthem's announcement that it would buy all of Cigna's shares in a cash and stock

17 "Some public hospitals win, others lose with Obamacare" By Robin Respaut, Reuters, July 23, 2015, http://www.reuters.com/article/2015/07/23/us-usa-hospital-medicaid-insight-idUSKCN0PX0CY20150723 (Accessed 7/27/15).

18 These Exchanges are intended to reduce the cost associated with health insurance and ease the process of selecting a health insurance plan by providing a single place, on the internet, for consumers to: (1) search for and compare health plans; (2) ask questions regarding coverage; (3) check eligibility for programs and tax credits; and, (4) ultimately enroll in a health plan. "Affordable Insurance Exchanges" U.S. Department of Health and Human Services, August 23, 2012, http://www.healthcare.gov/law/features/choices/exchanges/index.html (accessed March 20, 2012); "Patient Protection and Affordable Care Act" Pub. L. No. 111-148, § 1311(b), 124 Stat. 119, 173 (March 23, 2010); See Chapter 6 of *An Era of Reform—The Four Pillars* for further discussion regarding health insurance exchanges.

19 "White House: 11.4 Million 'and counting' Signed Up for Obamacare in 2015" By Jason Millman, Washington Post, February 17, 2015, http://www.washingtonpost.com/blogs/wonkblog/wp/2015/02/17/white-house-11-4-million-and-counting-signed-up-for-obamacare-in-2015/ (Accessed 7/22/15).

20 "Some New Frustrations as Health Exchange Opens" By Robert Pear and Abby Goodnough, New York Times, November 15, 2015, http://www.nytimes.com/2014/11/16/us/health-insurance-marketplace-opens.html (Accessed 7/22/15).

21 "Almost Half of Obamacare Exchanges are Struggling Over Their Future" By Lena H. Sun and Niraj Chokshi, May 1, 2015, http://www.washingtonpost.com/national/health-science/almost-half-of-obamacare-exchanges-are-struggling-over-their-future/2015/05/01/f32eeea2-ea03-11e4-aae1-d642717d8afa_story.html (Accessed 7/22/15).

22 "Health Insurance Companies Seek Big Rate Increases for 2016" By Robert Pear, New York Times, July 3, 2015, http://www.nytimes.com/2015/07/04/us/health-insurance-companies-seek-big-rate-increases-for-2016.html (Accessed 7/22/15).

23 "Health Insurance Companies Seek Big Rate Increases for 2016" By Robert Pear, New York Times, July 3, 2015, http://www.nytimes.com/2015/07/04/us/health-insurance-companies-seek-big-rate-increases-for-2016.html (Accessed 7/22/15).

24 "Table 3. Projections of the Population by Sex and Selected Age Groups for the United States: 2015 to 2060 (NP2014-T3)" U.S. Census Bureau, Population Division, December 2014, http://www.census.gov/population/projections/data/national/2014/summarytables.html (Accessed 3/4/15). Share of population calculated using data presented in source. 2015 share of population over the age of 65 = 47,830,000 / 321,369,000 = 14.9%. 2060 share of population over the age of 65 = 98,164,000 / 416,795,000 = 23.6%; "US Health Spending Trends By Age And Gender: Selected Years 2002-10" By David Lassman et al., Health Affairs, Vol. 33, No. 5, May 2014, http://content.healthaffairs.org/content/33/5/815.full.pdf (Accessed 8/6/14), p. 820.

25 "Anthem Offers to Buy Cigna in $54 Billion Deal" By Bob Herman, Modern Healthcare, June 20, 2015, http://www.modernhealthcare.com/article/20150620/NEWS/150629998 (Accessed 7/22/15).

transaction for approximately $54 billion,[26] as well as Aetna's announcement that it would purchase Humana for $37 billion.[27] While insurers may view a merger as a means to increase economies of scale and boost earnings (especially in light of the ACA's medical loss ratios), these mergers may, in turn, lead to greater consolidation among healthcare providers, in an effort to counter the bargaining power of enormous insurers.[28]

Accordingly, consolidation among healthcare providers is expected to increase over the next decade,[29] and one of the most visible aspects of this consolidation will continue to be the sale of academic medical centers to large healthcare systems. Academic medical centers may feel the pressures from the ACA's programs (including the two midnight rule, hospital acquired conditions reduction program, hospital readmission reductions, disproportionate share payments, and value based purchasing) more acutely, as a result of the high costs of an academic medical center's education, research, and specialty services.[30] Consequently, some universities, such as such as the University of Arizona and Vanderbilt University, have sold off their academic medical centers.[31]

As noted above (and throughout the various chapters of this *Guide*), the ACA has had a resounding impact on each of the *regulatory*, *reimbursement*, *competitive*, and *technological* aspects of the healthcare environment (i.e., the *Four Pillars* of the healthcare industry), ranging from the ramifications of the individual insurance mandate and the associated reimbursement of insurers and consumers, to the heightened regulatory scrutiny of healthcare transactions and the integration of providers within accountable care organizations, as well as the technological implementation of electronic health record systems associated with this provider integration. These *reimbursement*, *regulatory*, *competitive*, and *technological* changes are driving a surge in demand for professional, management advisory services. Now, more than ever, it is important for professional advisors to healthcare industry clients (i.e., CPAs, attorneys, physician executives, etc.) to stay up-to-date on current trends in the healthcare industry. In order to meet this demand, the due diligence and research, as well as a command of the basic concepts involved, required of professional advisors can be substantially enhanced by adhering to an analytical context within the contextual framework of the *Four Pillars*.

Professional advisors should avail themselves of the multitude of specialized information related to each of the *Four Pillars* of healthcare, which is more easily accessible than ever by means of the internet, e.g., through the websites of governmental agencies and organizations; professional societies and trade organizations with their respective journals, continuing education, and

26 "Anthem to Acquire Cigna, leaving only 3 Big Insurance Companies" By Aaron Smith, CNN Money, July 24, 2015, http://money.cnn.com/2015/07/24/news/companies/anthem-cigna-merger/ (Accessed 7/29/15).

27 "Aetna to buy Rival Health Insurer Humana for $37 Billion" By Sophia Yan, CNN Money, July 3, 2015, http://money.cnn.com/2015/07/03/investing/aetna-humana-merger/index.html?iid=EL (Accessed 7/29/15).

28 "Potential Insurance Mergers Could Spur More Provider Consolidation" By Bob Herman, Modern Healthcare, June 20, 2015, http://www.modernhealthcare.com/article/20150620/MAGAZINE/306209961 (Accessed 7/29/15).

29 "2015 Health Care Providers Outlook: United States" By Mitch Morris, Deloitte, 2015, http://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-2015-global-hc-country-reports-011215.pdf (Accessed 7/29/15).

30 "Hospitals Face Closures as 'a New Day in Healthcare' Dawns" By Melanie Evans, February 21, 2015, Modern Healthcare, http://www.modernhealthcare.com/article/20150221/MAGAZINE/302219988?template=print (Accessed 7/23/15); "Once Cash Cows, University Hospitals Now Source of Worry for Schools" By Melissa Korn, April 22, 2015, The Wall Street Journal, http://www.wsj.com/articles/universities-get-second-opinion-on-their-hospitals-1429725107 (Accessed 7/23/15).

31 "Once Cash Cows, University Hospitals Now Source of Worry for Schools" By Melissa Korn, April 22, 2015, The Wall Street Journal, http://www.wsj.com/articles/universities-get-second-opinion-on-their-hospitals-1429725107 (Accessed 7/23/15); "Banner, UAHN Merger in Arizona Signals Future of Academic Medical Centers" By Beth Kutscher, Modern Healthcare, February 26, 2015, http://www.modernhealthcare.com/article/20150226/NEWS/150229916 (Accessed 7/29/15).

newsletters; whitepapers; and, other resources (several of which are described in the *Association* and *Key Sources* sections in Chapters throughout this *Guide*). A dedicated commitment to continuing education and research are both prerequisites and ongoing obligations for professional advisors to maintain in order to remain aware of the constantly accelerating changes in the U.S. healthcare industry, which have a profound impact on any type of healthcare consulting engagement. The vast abundance of such research resources and continuing education opportunities does not, however, absolve the healthcare consulting professional from the obligation to be wary of the efficacy and validity of data, exercise prudent skepticism, and constantly enhance their due diligence and analytical skills related to understanding and applying appropriate knowledge gleaned from the torrent of available information, lending further credence to the old adage, *"Love everyone, trust no one, and paddle your own canoe!"*

Glossary

Accountable Care Organization: An entity that has physician leadership and internal structures, methods, and systems for measuring, assessing, and advancing the effectiveness and efficiency of patient care and provides a longitudinal, coordinated continuum of healthcare services. It crosses provider settings and is willing to be held accountable for the clinical results to the communities served.

Acupuncture: It incorporates Chinese, Japanese, Korean, and other Eastern traditions in anatomic stimulation of various corporal points. Current Procedural Terminology codes have been assigned to acupunctural procedures (97810-97814).

Acute Care: Provision of diagnostic and therapeutic services for relatively short periods of time due to often unexpected injuries or illnesses.

Advanced Dental Hygiene Practitioners (ADHPs): ADHPs possess a heightened degree of knowledge of the relationship between oral and systemic health and of preventive medicine, health education, and wellness.

Advanced Practice Registered Nurses (APRNs): APRNs are Registered Nurses with advanced education and training, which allows them to provide primary care services at a higher level either independently or in conjunction with physicians.

Age-Related Macular Degeneration (AMD): Disease that impairs retinal function and takes predominantly two forms: “wet” AMD and “dry” AMD.

Allopathic Medicine: “Traditional” medicine. Allopathic physicians are medical doctors (M.D.s).

Alternative Medicine: Serves as a replacement for conventional services.

Ambulatory Surgery Centers: Facilities at which surgeries not requiring inpatient hospital admission are performed.

Aromotherapy: It involves the use of flower, herb, and tree extracts to enhance and maintain health and wellness.

Assisted Living Facilities: Long-term care facilities that combine permanent housing with personal support services.

Audiologists: Audiologists provide services in the management of auditory and balance related conditions.

Ayurveda: An Indian medical system that dates back 5,000 years. Ayurvedic medicine implements diet and herbal therapies, as well as channeling of the mind, body, and spirit, to prevent and treat disease.

Biofield Therapies: It involves the application of pressure and manipulation by placing the hands in or through energy fields that are believed to surround and enter the human body. Such therapies include qi gong, Reiki, and therapeutic touch.

Boutique Medicine: Also known as "concierge medicine," the delivery of care to a limited amount of patients and for an annual retainer fee.

C Corporations: Corporations with three tiers of authority: owners (shareholders), a board of directors, and officers. Through issuance of stocks, physicians can become shareholders or sell their shares without disrupting the corporate infrastructure.

Carve-Out: A service that is separated from all insurance risk and is covered by a separate contract between the insurer and the carve-out vendor.

Certified Nurse-Midwives (CNMs): Nurse-midwives and CNMs provide primary healthcare services to women (before, during, and after pregnancy) and medical care to newborns for a month after their birth. Once a NM passes the certification exam, he or she becomes a CNM and joins the professional group.

Certified Registered Nurse Anesthetists (CRNAs): CRNAs are ARPNs trained in the provision of anesthesia services as it relates to surgical, labor and delivery, and pain management.

Chiropractic Diplomate: Chiropractic physicians who pursue advance degrees and pass the required exams obtain "diplomate" status in the specialized field.

Chiropractic: Chiropractic is a health profession concerned with the diagnosis, treatment, and prevention of musculoskeletal disorders and the effects of these disorders on the nervous system and general health. Through completion of a chiropractic education, a professional is generally known as a Doctor of Chiropractic (D.C.).

Chronic Care: Provision of diagnostic and therapeutic services for long-lasting or recurring illnesses and diseases.

Civil Liability: Liability that allocates accountability for potential lawsuits.

Clinical Nurse Specialists (CNSs): CNSs are APRNs who demonstrate expertise in the provision of highly specialized patient care and consult.

Clinical Psychology: The scientific study and application of psychology in order to understand, prevent, and alleviate psychologically caused distress or dysfunction (disability) and promote a patient's well being and personal development.

Cognitive-Behavior Therapy: A type of psychotherapy focused on the influence of thought on feelings and actions.

Commercially Directed Health Plans: Lets beneficiaries pay for regular healthcare services using health savings accounts or health reimbursement accounts. Implementing these pre-tax savings accounts into healthcare plans allow patients (or rather, consumers) to evaluate and make decisions regarding their healthcare.

Community Orientation: The criteria for classifying healthcare organizations comprised of a company's mission statement, health status indicators, and methods of assessment.

Complementary and Alternative Medicine (CAM): The umbrella term used to describe all services that fall outside the scope of traditional medicine.

Comprehensive or "Turnkey" Model: This type of MSO provides a comprehensive array of services including all of the nonclinical aspects of a practice's operations.

Computer-Aided Design and Computer-Aided Manufacturing (CAD/CAM): The use of CAD/CAM has become increasingly popular with dental practitioners, because it allows dentists to both make images of tooth preparations and to mill restorations the same day.

Continuing Medical Education or Maintenance of Certification: Annual requirements vary by state, profession, and medical staff requirements.

Coronary Artery Bypass Grafting: A procedure that "uses a piece of a vein from the leg or artery from the chest or wrist. The surgeon attaches this to the coronary artery above and below the narrowed area or blockage. This allows blood to bypass the blockage. Some people need more than one bypass."

Cost Containers: Organizations capable of controlling healthcare costs through economies of scale. However, the ability of cost containers to contract effectively with MCOs and systematically reduce utilization of services is limited. Physician practice management companies and MSOs are classified as cost-container EHOs.

Dental Amalgam: Dental amalgam is a dental filling material that is used to fill cavities caused by tooth decay. Its use as a dental device is regulated by the Federal Drug Administration, and it has been deemed safe for use.

Dental Health Maintenance Organization (DHMO): A dental HMO is a managed care capitation plan in which a provider is paid a fixed amount, regardless of how much or how little the patient utilizes services.

Dental Hygienist: Dental hygienists perform dental prophylaxis, or preventative care, by examining and cleaning a patient's teeth and gums using dental instruments. Dental hygienists most often work alongside dentists, but some states are relaxing supervision laws.

Diabetic Retinopathy: A common eye complication of diabetes in which leakage, blockage, or deterioration of retinal blood vessels causes vision impairment over time.

Direct Care Workforce: Also referred to as the frontline workforce, they provide personal long-term care services to the elderly and disabled populations (for example, home health aides, personal care aides, and certified nurse aides).

Direct Reimbursement: Direct reimbursement is a dental fee-for-service self-funded group plan that reimburses patients based on the amount spent on dental care, as opposed to the type of treatment the patient receives. "Instead of paying monthly insurance premiums, even for employees who don't use the dentist, employers pay a percentage of actual treatments received."

Direct-to-Consumer Medicine: Medical services that are driven solely by consumer demand; because almost all of these types of procedures are not covered or reimbursed by either private or governmental insurance, their demand level is more affected by cultural acceptance and discretionary income levels.

Doctor of Dental Surgery (D.D.S.) or Doctor of Dental Medicine (D.M.D.): D.D.S. and D.M.D. degrees are awarded to candidates after completion of a dental program. D.D.S. and D.M.D. degrees are functionally identical: the scope of practice for D.D.S. and D.M.D. practitioners is the same, and both programs use identical curriculum requirements set by the Commission on Dental Accreditation.

"Dry" AMD: The buildup of fatty deposits under light-sensitive retinal cells.

Durable Medical Equipment: Equipment that serves a medical purpose, can withstand repeated use, is not particularly useful in the absence of injury and illness, and is appropriate for home use. Includes specialized beds, wheelchairs, and prosthetics for home use.

Emergency Care Physicians: Physicians involved in the practice of emergency medicine, which involves treating patients on an unscheduled basis with episodic or acute conditions.

Emerging Healthcare Organization (EHO): Hospitals, physicians, or payors that are merging, affiliating, or integrating in response to changes in the healthcare environment.

Emerging Healthcare Organization: Healthcare organizations that develop in response to changes in market, regulation, and reimbursement.

Endoscopic Sinus Surgery: The traditional procedure used to treat chronic rhinosinusitis, uses surgery to re-establish maxillary sinus ventilation and mucociliary clearance through ventilation of the natural ostia. Although the procedure is unstandardized, proponents of the procedure cite that it is safer than the alternatives.

Extracorporeal Shockwave Therapy (EST): EST is a noninvasive procedure used to treat chronic heel pain by increasing bloodflow and breaking down calcification deposits in soft tissue.

Eye Refractions: "The refraction test is an eye exam that measures a person's prescription for eyeglasses or contact lenses. . . .A refractor or phoroptor holds a variety of lens strengths to test your vision."

Facilities and Services: The criteria for classifying healthcare organizations comprised of descriptors attributed to a company's specialty area.

Facility Metrics: Healthcare organizations are classified by the following criteria: total number of facility beds, utilization, finances, and staffing.

Financial Liability: Liability that assigns responsibility for any debt accrued by the practice.

Fully Integrated Medical Group (FIMG) Model: The most integrated type of physician organization, it has the greatest contracting and market leverage. Information systems, management, and other administrative functions may be centralized so that the organization can efficiently act as a single entity.

General Partnership: Practices that share the structural simplicity of sole proprietorships; however, multiple partners require more paperwork and result in more complicated liability implications.

Glaucoma: A disease that gradually causes degeneration of the cells that comprise the optic nerve, resulting in cell death and eventual loss of vision.

Glaucoma: Glaucoma is a disease of the eye marked by increased pressure within the eyeball that can result in damage to the optic disk and gradual loss of vision.

Group Model HMO: An HMO that contracts with physician practices on an exclusive basis so that the practices see patients primarily from that plan.

Health Maintenance Organization (HMO): An organization that, through an organized system of healthcare, provides or ensures the delivery of an agreed-upon set of comprehensive health maintenance and treatment services for an enrolled group of persons commonly under a capitation or prepaid fixed sum arrangement.

Heidelberg Retinal Tomograph (HRT) Device: "In recent years, new techniques of optic nerve imaging have become widely available, including confocal laser ophthalmoscopy (Heidelberg Retinal Tomography or HRT). . . .The HRT scans the retinal surface and optic nerve with a laser. It then constructs a topographic (3-D) image of the optic nerve including a contour outline of the optic cup. The nerve fiber layer thickness is also measured . . . Over time the machine can detect loss of optic nerve fibers."

Horizontal Integration: "The acquisition and consolidation of like organizations or business ventures under a single corporate management, in order to produce synergy, reduce redundancies and duplication of efforts or products, and achieve economies of scale while increasing market share."

Hospitalists: Physicians who work exclusively in the hospital setting.

Hospitalists: Physicians who, traditionally, worked solely within the hospital setting. Also known as "inpatient physicians."

Incident-To Billing (Medicare): Services provided by a professional other than a physician that are integral and significantly entwined with care provided by the primary physician.

Incorporated Practices: More expensive and formal practices, involving copious amounts of paperwork in exchange for protection from personal liability for the professional misdemeanors of other practitioners in the corporation.

Independent Diagnostic Testing Facilities: Facilities that are independent both of an attending or consulting physician's office and of a hospital.

Independent Practice Association (IPA) Model: A practice established by physicians who intend to maintain their independent practices but seek to offer their services to HMOs or other risk-sharing MCOs on a collective basis.

Independent Practice Associations (IPAs): Legal entities of independent physicians that contract with health insurance companies to provide medical services.

Integrated Delivery System (IDS) Model: A group of legally affiliated organizations in which hospitals and physicians combine their assets, efforts, risks, and rewards in order to deliver comprehensive healthcare services to the community. The legally affiliated entities perform all strategic planning and payor contracting for the various interests.

Integrated Delivery Systems: Vertically integrated organizations that are frequently comprised of insurers alongside physician practices, hospitals, and other entities that provide medical care to a specific population.

Integration: "A coherent set of methods and models on the funding, administrative, organizational, service delivery, and clinical levels designed to create connectivity, alignment, and collaboration within and between the cure and care sectors."

Integrative Medicine: Also known as integrated medicine, it is the combined application conventional and CAM services that have shown to be safe and effective.

Intensivists: Physicians trained in the practice of critical care medicine.

Joint-Venture, Hospital, or Physician-Owned MSOs: An MSO organization structure chosen to shield participants from individual liability.

Jumbo Employers: 20,000 or more employees.

Large Employers: 500 or more employees.

Limited Liability Corporations: Corporations that offer the liability protection of a corporation but the taxation simplicity of a sole proprietorship or general partnership.

Limited Liability Partnerships: The only unincorporated businesses that offer protection from personal liability for the actions of other partners or physicians; each partner's personal assets and investments are protected.

***Locum Tenens*:** To hold the place of, to substitute for. A Latin phrase used to describe healthcare professionals that travel from practice to practice serving as temporary practitioners.

Long Term Acute Care Hospitals: Hospitals that target patients who do not require intensive care but who do need more medical attention than other long-term post-acute care settings can provide.

Managed Care Organization (MCO): An organization that provides managed healthcare services.

Management Services Bureau or "Low-Tech" Model: In this model, physicians remain separate as independent legal entities who contract for services from the bureau at fair market value.

Management Services Organization (MSO) Model: The MSO typically establishes a separate legal entity that equally shares responsibility for establishing and operating the entity between physicians and the hospital. Typically, an MSO is not licensed to practice medicine.

Management Services Organization (MSO): A legal entity owned by physicians, hospitals, or lay investors that provides an array of practice management services.

Massage Therapy: It enhances muscle and tissue function by manipulating these tissues while promoting relaxation.

Medical College Admissions Test: "[A] standardized, multiple-choice examination designed to assess the examinee's problem solving, critical thinking, writing skills, and knowledge of science concepts and principles prerequisite to the study of medicine."

Medicare Advantage: Originally known as Medicare+Choice, a federally developed managed are model for Medicare, refined under the Medicare Prescription Drug, Improvement, and Modernization Act of 2003. "Medicare Advantage is a system for delivering Medicare benefits to beneficiaries who enroll in plans offered by private health insurance organizations."

Mid-Level Providers: A subset of licensed nonphysician practitioners that generally practices under the supervision of physicians but is allowed some autonomy in practice, whether in regard to prescriptive authority or the ability to provide some level of independent care.

Naturopathic Physicians Licensing Examination (NPLEX): NPLEX "is the examination graduates of one of the approved naturopathic medical colleges must pass to be eligible for licensure in any of the 16 states or 5 provinces that license/register naturopathic physicians."

Network Model HMO: An HMO that contracts with many independent physician practices that may also treat other patients who are not enrolled in the plan.

Nurse Practitioners (NPs): NPs are licensed APRNs who provide primary care services, specialty care services, or both to a variety of patients in ambulatory, acute, primary, and long-term care settings.

Occupational Therapist, Registered: The designation assigned to a practitioner who has achieved licensure.

Occupational Therapists: Occupational therapists care for patients with mental, physical, developmental, and emotional conditions that impair their ability to undertake daily tasks, occupational tasks, or both.

Ophthalmologists: Ophthalmologists are medical doctors (M.D.) who specialize in all aspects of eyecare including diagnosis, management, and surgery of ocular diseases and disorders. The primary distinction between an optometrist and ophthalmologist is that an ophthalmologist is a medical doctor and an optometrist is not.

Optical Coherence Tomography: Optical coherence tomography is a technique that "creates images by use of special beams of light. . . . The OCT machine can create a contour map of the optic nerve, optic cup and measure the retinal nerve fiber thickness."

Opticians: Opticians are trained in designing, measuring, fitting, and adjusting optical lenses and frames according to a patient's prescribed needs, specified needs, or both.

Optometrist: Optometrists are allied health professionals trained to "examine, diagnose, treat, and manage disease that affect the eye or vision." They also treat injuries and disorders of the visual system, the eye, and associated structures, as well as identify related systemic conditions affecting the eye.

Orthotics: "Orthotics are shoe inserts that are intended to correct an abnormal, or irregular, walking pattern . . . to make standing, walking, and running more comfortable and efficient by altering slightly the angles at which the foot strikes a walking or running surface." Podiatrists may prescribe orthotics to control foot movement post-surgery or as a "conservative approach" to minor foot problems.

Orthotists: Orthotists fit patients who have disabilities of the spine, limbs, or both with devices called ortheses.

Osseointegration: Osseointegration is "the firm anchoring of a surgical implant (as in dentistry or in bone surgery) by the growth of bone around it without fibrous tissue formation at the interface."

Osteopathic Manipulative Treatment (OMT): The use of the hands to diagnose illness and injury and to encourage the body's natural tendency toward good health. Specifically, the manual manipulation of joints, muscles, and fasciae is used to correct mechanical disorders. Additionally, OMT may be used in therapies related to circulation, lymphatic draining, and the nervous system.

Osteopathic Medicine: "Holistic" medicine. Osteopathic physicians are doctors of osteopathy (D.O.s)

Pachymeter: "The pachymeter measures central corneal thickness (CCT) . . . Measuring your central corneal thickness is also important since recent studies have found that thin CCT is a strong predictor of developing glaucoma in patients with high intraocular pressure (IOP)."

Pharmacists: Pharmacists are authorized to dispense prescription drugs and advise patients, as well as practitioners, on matters of drug dosage, chemical and biological interactions, and potential adverse reactions.

Physiatrists: Also referred to as "rehabilitation physicians," are experts at diagnosing and treating pain.

Physical Therapists (PTs): PTs provide rehabilitative services intended to aid in the recuperation of functionality and mobility, the remediation of pain, and the maintenance of restored strength to minimize or eliminate any permanent effects of a patient's condition.

Physician Assistants (PAs): PAs are licensed health professionals who practice medicine under the supervision of physicians, surgeons, or both.

Physician Extender: A very broad term also commonly referred to as "mid-level provider," "mid-level practitioner" and "non-physician practitioner" includes many mid-level providers, paraprofessionals, and allied health professionals (as defined in this book) who provide healthcare services under the supervision of a qualified physician.

Physician Hospital Organization (PHO) Model: A legal entity formed by a hospital and a group of physicians that combines both parties into a single organization for the purpose of gaining greater negotiating leverage in obtaining managed care contracts.

Physician Hospital Organizations: An enterprise that unites a hospital or group of hospitals with a physician organization through a contractual relationship.

Physician Investor-Owned MSOs: MSOs are formed and governed by physicians.

Physician Practice Management Companies: Firms that specialize in the management of large group practices or IPAs through ownership, management agreement, or both.

Piezoelectric Sensor: The piezoelectric sensor "collects data in response to applied mechanical stress, registers information faster than the body can react to the pressure, thus giving an accurate measurement of the position of the vertebra in the spine."

Podiatric Assistants: Podiatric assistants aide Doctors of Podiatric Medicine by recording medical histories, taking vital signs, explaining procedures, and assisting during examinations. Additional jobs may include developing x-rays and helping prepare patients for procedures.

Podiatry: Podiatry is a health profession concerned with medical and surgical diagnosis and treatment of disorders of the foot, ankle, and related structure of the leg.

Point of Service Plans (POS Plans): Combines aspects of both an HMO and a PPO. It allows prepaid enrollees to receive services from providers outside of their network.

Policy Rider: "An amendment that modifies the policy's coverage in some way (for example, by increasing or decreasing benefits)." Employees may be afforded the option of purchasing a policy rider in order to have CAM coverage.

Preferred Provider Organization (PPO): An entity that contracts with healthcare purchasers to provide medical services from a select group of providers.

Presbyopes: Presbyopes are individuals affected with presbyopia, a visual condition that becomes apparent especially in middle age and in which loss of elasticity of the lens of the eye causes defective accommodation and inability to focus sharply for near vision.

Primary Care Practitioners: "Physicians specifically trained for and skilled in comprehensive first contact and continuing care for persons with any undiagnosed sign, symptom, or health concern (the 'undifferentiated' patient) not limited by problem origin (biological, behavioral, or social), organ system, or diagnosis."

Prosthetists: Prosthetists fit patients who are missing limbs in part or entirely with devices called prostheses.

Psychiatric Hospitals: Hospitals that administer specialized services to patients with psychiatric illnesses.

Psychology: Study of the mind and human behavior.

Psychotechnology: Technologies to deliver mental health services.

Qi Gong: A technique that combines meditation, regulated breathing techniques, and physical motion to improve blood and qi circulation and strengthen immunity.

Qi: Vital energy.

Registered Dieticians (RD): RDs promote healthy dietary habits and consult on matters of nutritional modification in order to prevent, treat, and manage illnesses and conditions by creating dietary programs and overseeing a patient's meal preparation and distribution.

Registered Nurses (RNs): RNs graduated from an accredited nursing education program, successfully passed the NCLEX-RN national licensing examination, and provide a variety of preventative and medical care services, with some amount of independence, but usually in collaboration with other health professionals, including the assessment, diagnosis, and, in some cases, treatment of patients.

Registered Pharmacist (RPhs): A pharmacist who has been licensed by his or her state.

Rehabilitation Therapists: Rehabilitation therapists are mid-level therapists who trained in a specific type of rehabilitative and maintenance therapy; they provide an array of services intended to restore or enhance a patient's function and to recover, as much as possible, the patient's health and well-being.

Rehabilitative and Chronic Disease Hospitals: Hospitals that provide services that promote restoring health, maximizing quality of life, and recovery; rehabilitation and chronic disease hospitals can effectively service disabled patients.

Reiki: Based on the Japanese belief that physical healing results from spiritual healing, which is procured by spiritual energies that channel through the Reiki practitioner.

Research Facility: Facilities that employ physicians and practitioners in activities (funded or nonfunded) "to develop new medical knowledge, potentially leading to publication."

Residents: "Any physicians in supervised practice of medicine among patients in a hospital or in its outpatient department, with continued instruction in the science and art of medicine by the staff of the facility." Clinical fellows in advanced training in medicine, surgery, and other specialty fields also are classified as residents.

Resistors: Organizations designed to maintain the status quo, repel managed care, or gradually develop the knowledge necessary for successful operation within a managed care environment.

S Corporations: Corporations that can issue stock, but are limited to seventy-five stakeholders and can only issue one class of stock: common or preferred.

Scanning Laser Ophthalmoscope: "A laser scans your eyes in seconds, and then produces digital images of your retinas. Your doctor can use the images to check for abnormalities."

Self-Designated Practice Specialty: "The specialty which (a physician) has chosen to designate for himself/herself."

Short Term Acute Care Hospitals: Hospitals whose patient base has an anticipated length of stay which is less than twenty-five days.

Skilled Nursing Facilities: Also known as nursing homes, these facilities provide predominantly inpatient skilled nursing care and rehabilitative services and can be part of a hospital or hospital system. These facilities focus their attention on rehabilitating patients though specialty care and therapies, including physical, occupational, speech, and respiratory therapy. They also house

patients who have recently been discharged from a hospital and are in a transitional period before returning home.

Small Employers: 10–499 employees

Sole Proprietorship: Practices owned and operated by only one healthcare practitioner.

Specialty Hospital: An acute care hospital where at least 45 percent of its Medicare discharges correspond to procedures specific to that particular specialty area (for example, cardiac or orthopedic).

Speech-Language Pathologists: Speech-language pathologists assess patients in order to diagnose a variety of speech, language, cognitive, and swallowing conditions.

Spinal Manipulation: Also known as chiropractic adjustment, this is the main treatment technique used by chiropractors and involves manually applying controlled force into joints to restore mobility.

Staff Model HMO: An HMO that employs physicians and other providers who treat only the particular HMOs enrollees.

Supervision: There are three defined "levels" of supervision for nonphysician practitioners, listed in order of increasing requirements: (1) general: physician not required to be present, (2) direct: physician is immediately available, and (3) personal: physician is in the room.

Surface Electromyography (SEMG): "As muscles contract, microvolt level electrical signals are created within the muscle that may be measured from the surface of the body. A procedure that measures muscle activity from the skin is referred to as surface electromyography (SEMG)"

Surgical Hospital: An acute care hospital with at least 45 percent of its Medicare discharges involving a surgical procedure.

System-Owned MSOs: MSOs created, funded, and essentially governed by hospitals.

Tax Liability: Liability that establishes whether practice finances are filed on personal or corporate tax returns.

Teaching Facility: Facilities that employ physicians and practitioners with teaching appointments.

The American Board of Professional Psychology: Candidates must have a doctorate in psychology, postdoctoral training, experience within the field, and a professional endorsement, and they must pass the specialty board examination. Continuing education is essential in achieving advancement within the field.

Therapeutic Pharmaceutical Agent (TPA): "Only a TPA-certified optometrist is authorized to write prescriptions and/or dispense samples . . . [of] drugs . . . for the exclusive diagnosis or treatment of disease or conditions of the human eye, adnexa or eyelids."

Therapeutic Touch: Derives from the concept that a therapist's therapeutic forces can promote patient recovery as they pass their hands over their patients, identifying and rectifying any energy imbalances.

Tigecycline: Tigecycline is often used to podiatrists to treat complicated skin infections.

True Integrators: Organizations that are so financially integrated through risk contracting or ownership that true integration of care processes is feasible. Although very few systems in the United States operate as true integrators, many EHOs aspire to this level of assimilation. FMIGs and IDSs are classified as true integrators.

Unincorporated Practices: Practices that the liability protection afforded to corporations (incorporated practices) in exchange for easier setup at a lower cost.

United States Medical Licensing Examination: "[A]ssesses a physician's ability to apply knowledge, concepts, and principles, and to demonstrate fundamental patient-centered skills, that are important in health and disease and that constitute the basis of safe and effective patient care."

Vertical Integration: "The aggregation of dissimilar but related business units, companies, or organizations under a single ownership or management in order to provide a full range of related products and services."

"Wet" AMD: The less common but more damaging form of AMD, in which tiny blood vessels form and then break under the retina.

Activity Ratio: A measure that indicates how efficiently the organization utilizes its resources or assets, including cash, accounts receivable, salaries, inventories, properties, plants, and equipment.

Audit: A formal examination and verification of financial accounts.

Benchmarking to Industry Norms: A subset of financial benchmarking used to compare internal company-specific data to survey data from other organizations within the same industry.

Benchmarking: A method of finding and implementing best practices by comparing a business or healthcare entity against the best in order to reach new goals and pursue continuous improvement.

Buy-in: A process by which established group practices allow associates to transition into ownership.

Capitalization Rate: Any divisor (usually expressed as a percentage) used to convert anticipated economic benefits of a single period into value.

Cash Flow: Cash that is generated over a period of time by an asset, group of assets, or business enterprise. It may be used in a general sense to encompass various levels of specifically defined cash flows. When the term is used, it should be supplemented by a qualifier (for example, "discretionary" or "operating") and a specific definition in the given valuation context.

Charge Description Master: The list of codes that reflect the various services offered by a particular healthcare professional practice which is used for billing these services to payers.

Charting: The process of putting medical treatments and diagnosis into the medical record (physical or electronic).

Clients: Targets whose preliminary proposal is negotiated to an engagement agreement (contract) are considered clients.

Clinical Benchmarking: A type of benchmarking, often dependent upon the level of investment and multidisciplinary efforts across several levels of care, is utilized for continuous development and maintenance of quality healthcare, attaining targeted patient-focused outcomes, and identifying evidence-based benchmarks for best practices, among other clinical outcomes.

Clinical Quality Indicators: Benchmarking metrics used to measure any clinical outcome or patient treatment. Three types of indicators fall under the umbrella of clinical quality indicators: (1) generic indicators, (2) disease-specific indicators, and (3) functional indicators.

Coding: The process of using the *International Classification of Diseases, Ninth Revision, Clinical Modification* and the Healthcare Common Procedure Coding System to assign a numeric value to medical diagnoses, procedures and surgery, signs and symptoms of disease and ill-defined conditions, poisoning and adverse effects of drugs, and complications of surgery and medical care.

Collaborative Benchmarking: A rapidly growing form of benchmarking distinguished by its development of an atmosphere that facilitates learning and sharing of knowledge.

Compensation Planning Committee: A collection of practice members that is representative of the practice population as a whole; physician executives and practitioners of all levels and specialty areas are appointed to mirror the practice distribution.

Competitive Benchmarking: A type of benchmarking used for the purpose of gaining superiority over competitors.

Competitor Benchmarking: A type of external benchmarking used for comparing work processes with those of that industry's best competitor to determine new target performance levels and develop a clear understanding of its direct competition.

Complex or Compound: A multifaceted analysis that incorporates different types of tools to synthesize an overall conclusion.

Consultants: Any third-party assistance to the development process.

Control Premium: An amount or a percentage by which the pro rata value of a controlling interest exceeds the pro rata value of a noncontrolling interest in a business enterprise, in a reflection of the power of control.

Corporate Compliance Services: Services that analyze a corporation's activities and reports whether they are in compliance with federal and state regulations; if not, present suggestions on how to become compliant through the implementation of compliance programs.

Cost of Capital: The expected rate of return that the market requires in order to attract funds to a particular investment.

Discount for Lack of Control: An amount or percentage deducted from the pro rata share of value of 100 percent of an equity interest in a business to reflect the absence of some or all of the powers of control.

Discount for Lack of Marketability: An amount or percentage deducted from the value of an ownership interest to reflect the relative absence of marketability.

Discount Rate: A rate of return used to convert a future monetary sum into present value.

Disease-Specific Indicators: A subset of clinical quality indicators used to classify patients with regard to either a specific diagnosis or procedure, for example, the number of patients undergoing an elective surgery.

Economic Benchmarking: A type of benchmarking that concerns itself with research in market forces or comparison of business operation efficiency based on economic principles in a particular market.

Employee Retirement and Income Security Act: "A federal law that sets minimum standards for most voluntarily established pension and health plans in private industry to provide protection for individuals in these plans."

Equity Risk Premium: A rate of return added to a risk-free rate to reflect the additional risk of equity instruments over risk-free instruments (a component of the cost of equity capital or equity discount rate).

Excess Earnings: That amount of anticipated economic benefits that exceeds an appropriate rate of return on the value of a selected asset base (often net tangible assets) used to generate those anticipated economic benefits.

External Benchmarking: Consists of several different subcategories of benchmarking and includes any inter-entity comparison.

Fee Arrangements: The payment system agreed upon between consultant and client based on the amount of time and resources an engagement requires and its profitability for the consultant. Generally flat fees and hourly rates are used for consulting.

Financial Benchmarking: A method of financial analysis that may be used to understand the operational and financial status of a healthcare organization. Financial benchmarking consists of three steps: (1) historical subject benchmarking, (2) benchmarking to industry norms, and, (3) financial ratio analysis.

Financial Ratio Analysis: A subset of financial benchmarking that uses ratios, calculated as measurements of various financial and operational characteristics that represent the financial status of an enterprise, which are then evaluated in terms of their relative comparison to generally established industry norms.

Forced Liquidation Value: Liquidation value at which all, or the majority, of the assets will be sold at approximately the same time in a relatively quick fashion.

Forecasting: Using trend analysis to produce a prediction of future values or performance.

Foregone Compensation Formula: Allows associate physicians to achieve the minimum required buy-in amount for partnerships.

Functional Benchmarking: A derivative form of process benchmarking used to compare two or more organizations (that are not necessarily direct competitors) via comparison of specific business functions.

Functional Indicators: A subset of clinical quality indicators that utilize outcomes as a proxy for patient quality of life or overall population health, for example, patient functional performance following a procedure.

General Research: Comprised of the industry conditions, demographics, compensation trends, transactions, guideline publicly traded companies, industry specific trends, and other research not specifically related to the organization, practice, business, or enterprise of interest.

Generic Benchmarking: A type of benchmarking applicable to a variety of industries, that focuses on the identification, classification, and comparison of key business processes to those of the leading competitor(s).

Generic Indicators: A subset of clinical quality indicators based on a rate of occurrence within the patient population and includes measures of morbidity, mortality, and readmission.

Global Benchmarking: A type of external benchmarking that determines a comparison organization(s) based on geographic boundaries and location.

Going Concern Value: The value of a business enterprise that is expected to continue to operate. The intangible elements of going concern value result from factors such as having a trained work force, an operational plant, and the necessary licenses, systems, and procedures in place.

Goodwill: That intangible asset arising as a result of name, reputation, customer loyalty, location, products, and similar factors not separately identified.

Historical Subject Benchmarking: A subset of financial benchmarking that compares an organization's current or most recently reported performance with its past performance. This is used to identify changes of performance within the organization and to predict future performance.

Industry Benchmarking: A type of external benchmarking process used to compare an organization with its direct competitors and industry noncompetitors.

Institutional Quality Indicators: Benchmarking metrics used to determine the degree to which a provider adheres to regulatory standards set by accreditation agencies, associations, and other regulatory bodies.

Intangible Assets: Nonphysical assets, such as franchises, trademarks, patents, copyrights, goodwill, equities, mineral rights, and securities and contracts (as distinguished from physical assets), that grant rights and privileges and have value for the owner.

Internal Benchmarking: The comparison of different subdivisions or analogous products within one organization, by which comparison is limited to within-company projects and processes in order to identify best practices.

Internal Revenue Code: Outline tax-related implications of (1) how compensation plans are set up, (2) how compensation is paid, (3) how compensation is characterized, and (4) how compensation is treated by taxing authorities.

Invested Capital: The sum of equity and debt in a business enterprise. Debt is typically (1) all interest bearing debt or (2) long-term interest-bearing debt. When the term is used, it should be supplemented by a specific definition in the given valuation context.

Investment Value: The value to a particular investor based on individual investment requirements and expectations. (In Canada, the term used is "value to the owner.")

Leverage Ratio: A ratio of long-term debt to net fixed assets, which is used to illustrate the proportion of funds, or capital, provided by shareholders (owners) and creditors to aid analysts in assessing the appropriateness of an organization's current level of debt.

Liquidation Value: The present value of the net proceeds from liquidating the company's assets and paying off liabilities.

Liquidity Ratio: A metric that measures the ability of an organization to meet cash obligations as they become due, that is, to support operational goals.

Liquidity: The ability to quickly convert property to cash or pay a liability.

Management Advisory Services: Consulting services in the improvement of practice efficiency and efficacy.

Market Multiple: The market value of a company's stock or invested capital divided by a company measure (such as economic benefits or number of customers).

Net Book Value: With respect to a business enterprise, the difference between total assets (net of accumulated depreciation, depletion, and amortization) and total liabilities as they appear on the balance sheet (synonymous with "shareholder's equity"). With respect to a specific asset, the capitalized cost less accumulated amortization or depreciation as it appears on the books of account of the business enterprise.

Operational Benchmarking: A form of benchmarking similar to both process and performance benchmarking that targets noncentral work or business processes for improvement based on the application of the results.

Orderly Liquidation Value: Liquidation value at which the asset or assets are sold over a reasonable period of time to maximize proceeds received.

Organizational Development: The development of the internal systems and culture of an organization.

Performance Benchmarking: A more common form of benchmarking that utilizes outcome characteristics as benchmarking metrics (for example, price, speed, and reliability).

Physician Compensation Plan: A way of allocating an organization's revenues and expenses while determining appropriate methods of compensating professionals for the services they provide.

Practice Management: Consulting that involves a breakdown of the day-to-day management of the healthcare professional practice and analysis of the processes in place in order to identify areas of improvement.

Practice Profiling: Reporting of raw, unbiased practice data to practitioners.

Premise of Value: An assumption regarding the most likely set of transactional circumstances that may be applicable to the subject valuation (for example going concern or liquidation).

Presentation: The final phase of a consulting project during which the consultant reports results to clients or other parties.

Process Benchmarking: A type of benchmarking that focuses on the identification of particular key business processes or operational characteristics that require improvement.

Profitability: A measure of the overall net effect of managerial efficiency of the enterprise.

Prospects: Those suspects whose information leads the consultant to believe they could be potential clients.

Qualified Domestic Relations Orders (QDRO): "A judgment, decree, or order that is made pursuant to state domestic relations law," that creates, recognizes, or assigns an alternate payee's right to receive, a percentage of benefits payable to a participant under a retirement plan."

Risk Management: Adjusting exposures to stabilize variability while trimming dominant exposure to spread out and minimize risk.

Service Quality Indicators: Benchmarking metrics used to measure customer satisfaction regarding provided healthcare services.

Specific Research: Data pertaining specifically to the entity of interest that must usually be obtained from that entity.

Standard of Value: The identification of the type of value being used in a specific engagement (for example, fair market value, fair value, or investment value).

Strategic Benchmarking: A form of external benchmarking, similar to process benchmarking, that has the potential to fundamentally change business process by focusing upon identification and comparison of decision-making operations that affect the observed business outcomes.

Strategic Initiatives: A company's set objectives that, if met, would satisfy the vision of the organization.

Summarization: Using tables, matrices, abstracts, and so forth to distill a body of information into one or more of its essential characteristics in order to gain a general overview or compare information.

Suspects: Suspects are potential clients that have been identified by the consultant. Once indentified information is gathered on them, including: size of practice, location, site, specialty(s), services, ownership, financial status, and so forth This information is often stored in the consultant's contacts database.

Tactical Plans: A company's formal description of how, when, and where the strategic initiatives will be met.

Tangible Assets: Physical assets (such as cash, accounts receivable, inventory, property, plant and equipment, and so forth).

Targets: Prospects are surveyed on a case-by-case basis and those whose information meets the limiting qualifications set by the consultant have preliminary proposals prepared and can be considered targets.

The Joint Commission: An independent, nonprofit organization responsible for the certification and accreditation of healthcare organizations across the United States.

"Tick and Tie": The mechanical process of checking every figure and process for errors, a term often used in accountancy.

Valuation Date: The specific point in time as of which a valuator's opinion of value applies (also referred to as the "effective date" or "appraisal date").

Valuation: "The act or process of determining the value of a business, business ownership interest, security, or tangible asset."

Value in Exchange: An orderly disposition of a mass assemblage of the assets in place but not as a going concern enterprise; also known as "liquidation value."

Value in Use: Premise of value that assumes that the assets will continue to be used as part of an ongoing business enterprise, producing profits as a benefit of ownership.

Vision: A company's vision should answer the long-term question: "why are we in business?"

Weighted Average Cost of Capital: The cost of capital (discount rate) determined by the weighted average, at market value, of the cost of all financing sources in the business enterprise's capital structure.

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