

CHAPTER 1

THE ORIGINS AND HISTORY OF MEDICINE AND MEDICAL PRACTICE

"Not everything that counts can be counted, and not everything that can be counted counts."

—William Bruce Cameron

LEARNING OBJECTIVES

- Appreciate the history of medical practice.
- Explore the eight domains of medical practice management.
- Understand the forces of change affecting medical practice.
- Develop a perspective on the changes affecting medical practice.
- Understand the importance of the medical practitioner.

INTRODUCTION

Healthcare tends to be an accurate barometer of US society. Consider that virtually every aspect of social dysfunction, or of the human enterprise in general, becomes intertwined with the healthcare system. Most of the US population is born in a hospital, and many die

there. The healthcare system is a place of joy and sorrow, hope and despair. The importance of the health system is hard to overstate, and the role that the medical providers play is a key factor in how the future system of care will take shape. This near-universal involvement with the healthcare system of virtually every person makes healthcare an accurate barometer of our society.

Often, the physician practice is the first line of care delivery, and for many patients, the physician provides the longitudinal care that sustains health and well-being (DiMatteo 1998). Therefore, the medical practice is a fundamental component of the healthcare delivery system, making the management and leadership of the medical practice a key to reforming that system. Because the physician practice is often the entry point for most patients into the healthcare system, in many ways it embodies the challenges of practice management, and the choices made to overcome these challenges may be endless and require achieving a careful balance of the art and the science of management.

This balance requires what W. Edwards Deming, the father of modern quality management, referred to as “profound knowledge,” as well as the expertise to know when and how to use it (Deming Institute 2016). Deming’s concept of profound knowledge is based in systems theory. It holds that every organization is composed of four main inter-related components, people, and processes, which depend on management to carefully orchestrate this interaction:

- ◆ Appreciation of a system
- ◆ Theory of knowledge
- ◆ Psychology of change
- ◆ Knowledge about variation

How do we keep up with the rapidly changing environment of healthcare in this new era? What metrics do we use, and what do we ignore? This journey demands that we answer these and more questions to bring about change in our healthcare system. It requires the full engagement of the provider community if meaningful and lasting change is to occur. Once change is effected, a new paradigm of care delivery will require a new mind-set that moves the industry from healthcare as the goal of the US healthcare system to well-being (Gawande 2014, 2016). Although health is critical to overall well-being, it is not the only issue. This text provides technical information on the management of the medical practice, but it also offers insight into necessary new skill sets providers and other healthcare leaders must have and roles they must play to create a paradigm of sustainable care for the future to optimize well-being as well as health.

LIFELONG LEARNING

Practice management is changing rapidly in response to the ever-changing landscape of healthcare and the medical practice. Practice managers need to be committed to lifelong learning and be active in our professional organizations to ensure they are up-to-date on current knowledge.

The Medical Group Management Association (MGMA), with its academic arm, the American College of Medical Practice Executives (ACMPE), is the premier practice management education and networking group for practice managers. The organization dates back to 1926 and represents more than 33,000 administrators and executives in 18,000 healthcare organizations in which 385,000 physicians practice. MGMA (2016a) has been instrumental in advancing the knowledge of practice management, and ACMPE offers a rigorous **certification** program in practice management that is widely recognized in the industry.

ACMPE has identified eight areas that are essential for the practice manager to understand (exhibit 1.1).

This text examines each of these domains of the practice management body of knowledge to provide a sound, fundamental base for practice managers and practice leaders. It includes a comprehensive overview that does not assume a great deal of prior education in the field of practice management. Furthermore, it seeks to provide not only specific information about the management of the medical practice but also context in the larger US healthcare system. Too often, different segments of the healthcare system see themselves as operating in isolation. This point of view must change if medical practices are to transform and if managers are to lead successful practices in the future, whether a small, free-standing practice or a large practice integrated with a major healthcare system.

Another prominent organization for the education and advancement of practice management is the American College of Healthcare Executives (ACHE). ACHE is a professional organization of more than 40,000 US and international healthcare executives who

Certification

A voluntary system of standards that practitioners meet to demonstrate accomplishment or ability in their profession. Certification standards are generally set by non-governmental agencies or associations.

Business operations	Financial management
Human resource management	Information management
Organizational governance	Patient care systems
Quality management	Risk management

Source: MGMA (2016b).

EXHIBIT 1.1

The Eight Domains of the Body of Knowledge for Practice Managers

lead healthcare systems, hospitals, and other healthcare organizations. Currently with 78 chapters, ACHE offers board certification in healthcare management as a Fellow of ACHE, a highly regarded designation for healthcare management professionals (ACHE 2016).

THE AMERICAN HEALTHCARE SYSTEM

The practice of medicine drives the US healthcare system and its components, and medicine is heavily influenced by the system as well. Medical practice and the healthcare system both are built on the foundation of the physician–patient relationship. Although the percentage of total healthcare costs attributed to physicians and other clinical practitioners was 20 percent in 2015, the so-called clinician’s pen, representing the prescribing and referral power of medical practice clinicians, indirectly accounts for most healthcare system costs. Administrators do not prescribe medication, admit patients, or order tests and services. This fact is just one illustration of a fragmented system whose segments can act independently. This fragmentation must be addressed if medical practices are to provide high-quality healthcare to patients at the lowest cost possible.

To begin our study of practice management, the book first offers some perspective of medical practices in terms of the overall US healthcare system. A complete history of the practice of medicine is beyond the scope of this text, but the lengthy and enduring nature of medical practice is important to recognize. The first known mention of the practice of medicine is from the Old Kingdom of Ancient Egypt, dating back to about 2600 BC. Later, the first known code of conduct, the Code of Hammurabi, dealt with many aspects of human **behavior** and, most importantly for our study, established laws governing the practice of medicine. The first medical text was written about 250 years later (Nunn 2002).

Exhibit 1.2 provides a sample of some significant points in the development of the physician medical practice from ancient times to the present. The reader may wonder why such a diverse series of events is listed, ranging from the recognition of the first physician to the occurrence of natural disasters and terrorist acts. Medicine, whether directly or indirectly, influences virtually every aspect of human life. Events such as Hurricane Katrina, the 9/11 terrorist attacks, the emergence of the human immunodeficiency virus (HIV), and the Ebola virus outbreak have had major impacts on the healthcare system and physician practice. Before 9/11, medical practices thought little about emergency preparedness and management; such activities were seen as under the purview of government agencies. Until HIV was identified in 1983 as the cause of acquired immunodeficiency syndrome (AIDS), and reinforced by the Ebola crisis of 2014, medical practices spent few resources and little time thinking about deadly infectious disease and the potential for it to arrive from distant locales. A traveler can reach virtually any destination in the world within a 24-hour period, which is well within the incubation period of most infectious agents. Modern air travel has made the world of disease a single place, so practices must be mindful of patients’ origins and travels.

Behavior

How an individual acts, especially toward others.

EXHIBIT 1.2

Selected Major
Events in the
History of
Medicine and
Medical Practice

2600 BC	Imhotep is a famous doctor and the first physician mentioned in recorded history. After his death he is worshiped as a god. (Hurry 1978)
1792–1750 BC	The Code of Hammurabi is written, establishing laws governing the practice of medicine. (Johns 2000)
1500 BC	The Ebers Papyrus is the first known medical book. (Hinrichs'sche, Wreszinski, and Umschrift 1913)
500 BC	Alcamaeon of Croton in Italy says that a body is healthy as long as it has the right balance of hot and cold, wet and dry. If the balance is upset, the body falls ill. (Jones 1979)
460–370 BC	Hippocrates lives. He stresses careful observation and the importance of nutrition. (Jones 1868)
384–322 BC	Aristotle lives. He says the body is made up of 4 humors or liquids: phlegm, blood, yellow bile, and black bile. (Greek Medicine.net 2016)
130–200 AD	Roman doctor Galen lives. Over following centuries, his writings become very influential. (Sarton 1951)
12th and 13th centuries	Schools of medicine are founded in Europe. In the 13th century, barber-surgeons begin to work in towns. The church runs the only hospitals. (Cobban 1999; Rashdall 1895)
1543	Andreas Vesalius publishes <i>The Fabric of the Human Body</i> . (Garrison and Hast 2014)
1628	William Harvey publishes his discovery of how the blood circulates in the body. (Harvey 1993)
1796	Edward Jenner invents vaccination against smallpox. (Winkelstein 1992)
1816	Rene Laennec invents the stethoscope. (Roguin 2006)
1847	Chloroform is used as an anesthetic by James Simpson. (Ball 1996)
1865	Joseph Lister develops antiseptic surgery. (Bankston 2004)
1870	The Medical Practice Act is passed. Licensure of physicians becomes a state function. (Stevens 1971)
1876	The American Association of Medical Colleges is founded. (Coggeshall 1965)
1880	Louis Pasteur invents a cure for chicken cholera, the first vaccine. (Debré 2000)

EXHIBIT 1.2

Selected Major
Events in the
History of
Medicine and
Medical Practice
(continued)

1895	Wilhelm Conrad Röntgen X-rays are discovered. (Glasser 1933)
1910	The Abraham Flexner report on medical education is published. (Flexner 1910)
1928	Penicillin is discovered by Scottish scientist Alexander Fleming, and it is established that the drug can be used in medicine. (Ligon 2004)
1929	The first employer-sponsored health insurance is created at Baylor Teachers College as Blue Cross. (Buchmueller and Monheit 2009)
1931	The electron microscope is invented. (Palucka 2002)
1943	Willem Johan Kolff invents the first artificial kidney (dialysis) machine. (Heiney 2003)
1951	Epidemiology studies identify cigarette smoking as a cause of lung cancer. Sir Richard Doll is the first to make this link. (Keating 2009)
1953	Jonas Salk announces he has developed a vaccine for polio. (Koprowski 1960)
1953	The structure of DNA is determined. (Dahm 2008)
1965	Medicare and Medicaid are passed into Law. (Social Security Administration 2016)
1967	The first heart transplant is performed by Christiaan Barnard. (Barnard 2011)
1971	MRI scanning is invented. (Lauterbur 1973)
1973	The HMO Act is passed. (Dorsey 1975)
1989	President George W. Bush signs the Omnibus Budget Reconciliation Act of 1989, enacting a physician payment schedule based on a resource-based relative value scale. (AMA 2017)
1996	The Health Insurance Portability and Accountability Act is passed as an amendment to the HMO Act. (Atchinson and Fox 1997)
2001	The 9/11 terrorist attacks occur. (Bernstein 2003)
2003	The human genome is sequenced. (National Human Genome Research Institute 2010)
2005	Hurricane Katrina devastates the Gulf Coast, including New Orleans. (Knabb, Rhome, and Brown 2005)
2008	The Triple Aim for healthcare delivery is proposed by the Institute for Healthcare Improvement. (Berwick, Nolan, and Whittington 2008)

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2008	Medicare Part D is enacted. (Hargrave et al. 2007)	EXHIBIT 1.2 Selected Major Events in the History of Medicine and Medical Practice <i>(continued)</i>
2010	The Affordable Care Act is passed. (HHS 2010)	
2012	High-deductible health plans become more common. (Bundorf 2012)	
2014	The Ebola crisis emerges in West Africa. (CDC 2014)	
2016	Zika virus becomes a serious health threat. (CDC 2016b; Wang and Barry 2016)	

The evolution of medical practices has coincided with and been driven in part by the development of medical technology and the scientific revolution. Medicine was limited in scope and primitive until the middle of the nineteenth century. Theories of disease were arcane, and diagnostic tools were largely absent (Rosenberg and Vogel 1979). Prior to 1850, medical education constituted an apprenticeship that was inconsistent and poorly preceptored, with no standard curriculum (Rothstein 1972). Procedures focused on expelling the disease with bleedings and emetics. Surgery was limited because of the lack of anesthesia, and as a result, being fast was better than being good. Patients often directed the physician as to the care they should receive. One might say early medical practice was the first iteration of patient-centered care (Burke 1985).

PRACTICE MANAGEMENT RESOURCES

Now, however, the amount of information available about medicine and medical practice management is virtually endless, representing many points of view; ideas; political world views; notions about funding and access; and the numerous disciplines in the broader management field, such as **accounting**, finance, human resources management, organization development, and logistics. With the vast expanse of knowledge available, students of healthcare and practice management are encouraged to develop lifelong learning skills. The field is changing so rapidly that the need for continuous updating of knowledge and skills is essential.

For example, practice managers need to build a virtual library of accurate and reliable sources. The list that follows comprises the foundation of that library, which should be referred to frequently (see the appendix to this text for each resource's website):

- ◆ Centers for Medicare & Medicaid Services (CMS)
- ◆ Advisory Board

Accounting

A system for keeping score in business, using dollars.

- ◆ Dartmouth Atlas
- ◆ National Committee for Quality Assurance
- ◆ Institute for Healthcare Improvement
- ◆ Institute of Medicine
- ◆ Institute for Health Policy and Innovation
- ◆ Kaiser Family Foundation
- ◆ Robert Wood Johnson Foundation
- ◆ Annenberg Foundation
- ◆ Commonwealth Fund
- ◆ Centers for Disease Control and Prevention
- ◆ Agency for Healthcare Research and Quality

THE DIMENSIONS OF MEDICAL PRACTICE

Medical practices can take many forms, ranging from small sole proprietorships to large multispecialty medical practices. Recent years have seen more medical practices embedded in large healthcare organizations, which also may be solo practices or large multispecialty entities (see exhibit 1.3).

A group practice is defined as a medical practice consisting of two or more practitioners working in a common management and administrative structure. Single-specialty groups are those that focus on one aspect of medicine, such as general surgery, family practice, orthopedics, cardiology, or internal medicine. Multispecialty medical groups contain more than one medical specialty in the organization. Multispecialty practices are highly integrated, with a common **governance** leadership and common management structure, and they have a highly developed corporate system for managing finances and dealing with regulatory agencies. Their operation and function are much more complex than solo or small practices.

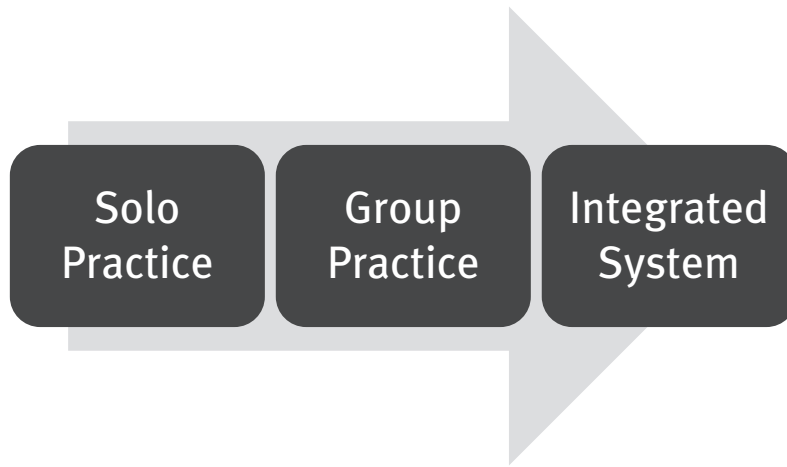
Integrated delivery systems (IDSs) are networks of healthcare organizations under a single holding company or parent organization that contain multiple components of healthcare delivery. An IDS often includes hospitals, physicians and other clinicians, and payment organizations, often referred to as third-party payer organizations. The **goal** is to provide as complete a continuum of care as possible.

Governance

A system of policies and procedures designed to facilitate oversight of the management of the enterprise. Serves as the foundation of how the practice will behave, compete, and document its actions.

Goal

A specific target that an individual or a company tries to achieve.

**EXHIBIT 1.3**

Practice
Structures—Simple
to Complex

TYPES OF PRACTITIONERS

Physicians have, of course, played a pivotal role in the US healthcare system since its inception. Physicians—and now, other nonphysician providers such as nurse practitioners (discussed later)—care for patients by

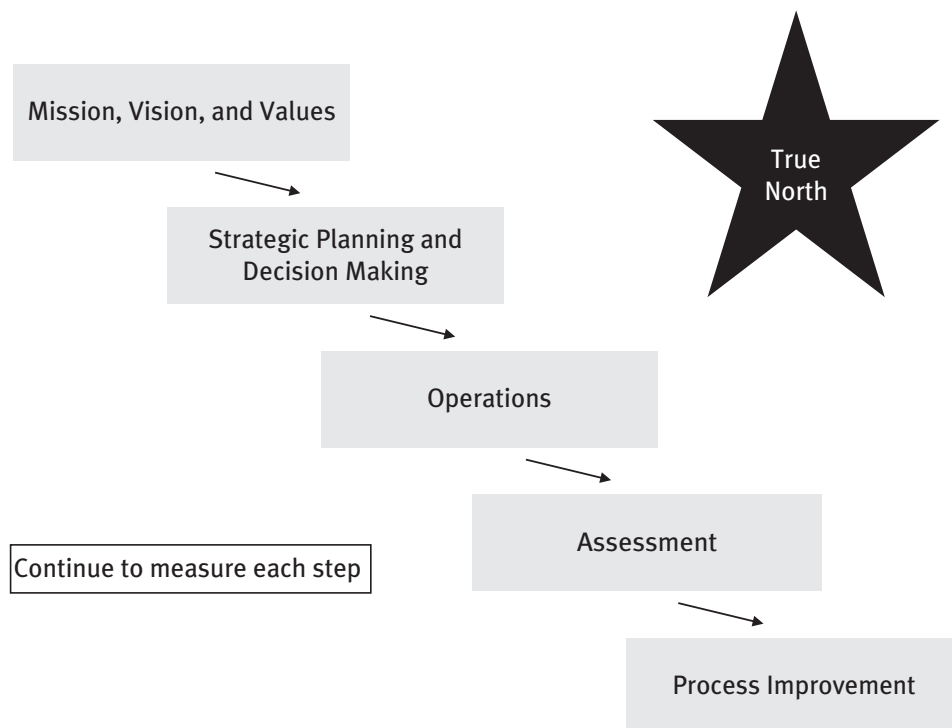
- ◆ assessing the patient's health status,
- ◆ diagnosing the patient's condition, and
- ◆ prescribing and performing treatment.

It has been said that the most expensive instrument in the healthcare industry is the provider's pen. An amusing statement, it also carries a lot of truth because all diagnostic and surgical procedures as well as office-based and hospital-based assessments—in fact, all care in general—is either performed or ordered by a provider.

Furthermore, the medical practice is unlike any other organization in the medical field because the nature and identity of the practice is closely linked to the individual providers in the practice. The providers are the primary producers and the primary governance body, and they are held accountable for the performance of the practice in a personal way. Their income is directly tied to the practice's performance, more closely than for other medical field workers. Exhibit 1.4 shows the fundamental components of a medical practice.

Often, the challenge in practice management is to serve the interests of the providers while maintaining a focus on the patient, with patient focus being the True North of the practice.

EXHIBIT 1.4
The Practice
Management
Model



“True North” is a concept taken from Lean management that embodies the ideal state of a practice, its providers’ vision of perfection, and the type and quality of practice it should strive to achieve every day. True North should transcend the individual and his or her personal goals or actions. Achieving personal objectives is not mutually exclusive but coincidental with True North.

Exhibit 1.5 shows the number of physicians practicing in the United States. This number can be further broken down into the number of practices by size and multispecialty versus single specialty, as shown in exhibit 1.6. Note the increasing size of practices over time, a trend that is expected to continue.

EXHIBIT 1.5
Total Active
Physicians in the
United States,
April 2017

Primary Care Physicians	Specialist Physicians	Total
443,962	479,346	923,308

Source: Kaiser Family Foundation (2017).

Number of Physicians in Practice	Single-Specialty Practice	Multispecialty Practice
1	1.5%	0.3%
2 to 4	42.0%	13.8%
5 to 10	31.7%	20.8%
11 to 24	13.7%	17.2%
25 to 49	6.7%	11.1%
50+	4.5%	36.9%
Total	100%	100%
<i>N</i>	1,452	836

EXHIBIT 1.6
Distribution
of Single- and
Multispecialty
Physicians by
Practice Size, 2014

Source: Kane (2014).

A primary care physician (PCP) is often the first contact for a patient with an undiagnosed health concern. In addition, PCPs frequently provide continuing care for many medical conditions that are not limited by cause, organ system, or diagnosis. This purview of practice differs from a medical specialist, who has completed advanced education and clinical training in a specific area of medicine and typically focuses on the diagnosis and treatment of one organ system of the body and its diseases.

Nurse practitioners and physician assistants are a growing segment of medical service provider, as seen in exhibit 1.7. A physician assistant (PA) is a nationally certified and state-licensed medical professional. PAs practice medicine with physicians and other providers and are allowed to prescribe medication in all 50 states, the District of Columbia, the majority of US territories, and the uniformed services. A nurse practitioner (NP) is a registered nurse qualified, through advanced training, to assume some of the duties and responsibilities of a physician.

PAs and NPs are sometimes referred to as advanced practice professionals or mid-level providers; however, the term *mid-level provider* is considered obsolete.

State laws vary as to the specific duties PAs and NPs are allowed to perform, so the practice manager must be fully informed on these regulations.

Advanced practice professionals are becoming increasingly important to medical practices because they can replace physicians in care delivery for many services, reserving the physician for more complex care requiring their expertise. For example, PAs and NPs often work as part of a care team with physicians. They may examine the patient first; collect facts and findings; and then, in collaboration with the physician, make a diagnosis

EXHIBIT 1.7

Nurse Practitioners
and Physician
Assistants

Provider Type	Total	Percent Primary Care	Practicing Primary Care
Nurse practitioners	106,073	52.0%	55,625
Physician assistants	70,383	43.4%	30,402

Source: AHRQ (2011).

and develop a treatment plan. The physician supervises the process and conducts his or her own examination of the patients to ensure that the proper care is delivered. The physician often checks critical elements of the exam and establishes a relationship with the patient. The PA or NP typically follows up with the patient once the treatment plan is established.

PRACTICE OWNERSHIP

In addition to the area of medicine practiced, physician practices can be classified by type of ownership. Exhibit 1.8 shows the distribution of medical practices by ownership. Note the trend—also expected to continue—toward practice ownership by hospitals and healthcare systems.

LICENSING PHYSICIANS

All 50 states require physicians and medical providers to hold a license. The licensing of medical providers is performed under the auspices of a medical examining board. These boards have the right to grant a license to practice medicine and the responsibility to investigate and discipline providers in cases of inappropriate conduct.

These licenses provide the practitioner a general right and privilege to practice medicine, but they usually do not grant specific privileges to practice a particular medical specialty. This activity is beyond the scope of **licensure** and typically is conducted by the hospital or hospitals at which the physician or advanced practice provider delivers care.

The licensing process includes a thorough, painstaking review and verification of the training and experience the physician or provider has received. Criminal background checks and reviews of the National Practitioner Data Bank (NPDB) are conducted in this process. The NPDB contains documentation of any disciplinary acts leveled against the physician, malpractice settlements, and other practice restrictions the physician may have received.

Reciprocity, or the reciprocal granting of a medical license by states based on licensing of the provider in another state, has become a thing of the past because of concerns

Licensure

A mandatory system of state-imposed standards that practitioners must meet to practice a given profession.

	2012	2014
At least some hospital ownership	23.4%	25.6%
Wholly owned by hospital	14.7%	15.6%
Jointly owned, physicians and hospital	6.0%	7.3%
Unknown whether wholly or jointly owned	2.6%	2.7%
Direct hospital employee	5.6%	7.2%
Not-for-profit	6.5%	6.4%
Other	4.4%	4.0%
Total	100%	100%
<i>N</i>	3,466	3,500

EXHIBIT 1.8

Distribution of Physicians by Practice Ownership Structure, 2012 and 2014

Source: Kane (2014).

that practitioners with a poor record or history of committing fraud can simply cross state lines and begin anew.

Licensure should not be confused with certification. Many medical specialties offer special recognition through board certification, which indicates the practitioner has acquired additional, specific training and testing in an area of medicine (see exhibit 1.9). Contrary to licensure, the absence of board certification by itself does not prohibit a physician from practicing in a medical specialty in most states.

MEDICAL TRAINING

According to the American Association of Medical Colleges (AAMC 2016), 145 accredited US and 17 accredited Canadian medical schools; nearly 400 major teaching hospitals and health systems, including 51 US Department of Veterans Affairs medical centers; and more than 80 academic societies offer medical education. In addition, the American Association of Colleges of Osteopathic Medicine (AACOM 2016) reports that 31 colleges of osteopathic medicine are in operation. Although both are fully licensed physicians in the United States and very similar in many respects, doctors of osteopathy (DOs), or osteopaths, differ from medical doctors (MDs) in the educational path they take for their medical education. DOs

EXHIBIT 1.9

Partial List of
Medical Specialties

Allergies and immunology	Anesthesiology	Cardiology
Dermatology	Emergency medicine	Genetics
Gerontology	Gynecology	Hematology
Internal medicine	Neurology	Obstetrics
Oncology	Otolaryngology	Palliative care and hospice
Pathology	Pediatrics and related subspecialties	Preventive medicine
Primary care practice	Psychiatrist	Radiation oncology
Radiology	Surgery and related subspecialties	Urology

attend osteopathic medical schools, and MDs attend allopathic medical schools. Each type of school teaches the diagnosis and treatment of disease, but the disciplines vary somewhat in philosophy, with the osteopathic approach focusing more on a holistic view of human disease and treatment. Also worth noting is that DOs often complete their postgraduate training in allopathic residencies and fellowships, which further reduces the distinction between the two types of physician.

Among them, these organizations employ more than 128,000 faculty members, educate 83,000 medical students, and host 110,000 resident physicians (AAMC 2016).

WHAT IS CHANGING?

THE CONUNDRUM

Three fundamental aspects of practice management and care delivery are important to focus on in any discussion of medical practice: high quality, high access, and low cost.

Economists may argue that a practice can succeed as a business with any two of those three components, for instance, high quality and a high level of access, where cost is not low. Indeed, economic theory holds that a business cannot achieve all three simultaneously. However, medical practices must achieve each to be an effective and high-quality practice.

Consider that in some countries, to limit healthcare costs, a concern around the world, their healthcare systems limit access. For example, delays are seen with hip replacements, knee replacements, and even some essential surgeries. In the United States, these procedures can be undertaken almost immediately. But healthcare costs for care and treatment

are much higher than in other countries. Thus, one job of the practice manager and leader is to maximize or optimize the relationship between cost, access, and quality (see exhibit 1.10).

SOCIAL CHANGE

As US society has changed, so has the practice of medicine. In social terms, the country has moved from a time when information about health and our healthcare was the sole purview of the medical professional to a time when individuals have access to an enormous amount of information. The Internet has had a profound impact on healthcare. Patients are now able to read about virtually any condition, diagnosis, or treatment, and in many cases, they make judgments about what option is in their best interest.

Patients also have demonstrated new, or renewed, interest in alternative forms of healthcare. A variety of terms are associated with alternative medicine, including *complementary medicine* and *integrative medicine*. Complementary and alternative medicine (CAM) modalities include acupuncture, energy therapies, magnetic field therapies, therapeutic touch, Reiki, Ayurvedic medicine, herbal medicine, and Chinese medicine, to name a few.

The effectiveness of these therapies has been demonstrated to varying degrees, but Americans spent more than \$33.9 billion in 2007 on CAM products and services, according to a National Institutes of Health survey conducted by the National Center for

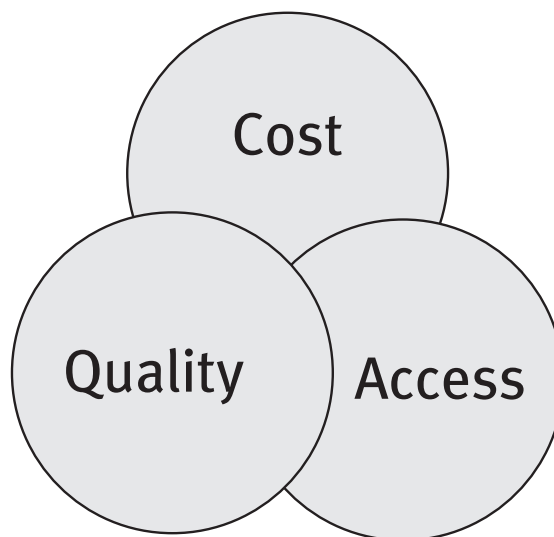


EXHIBIT 1.10
The Practice
Conundrum

Complementary and Integrative Health (2009). These findings indicate that patients are seeking solutions that suit their healthcare needs better than traditional medicine does.

WHAT ARE SOME OF TODAY'S CHALLENGES?

To develop an appreciation for some of the important changes and challenges facing medical practice, this section touches on a few important issues, including the following:

- ◆ The cost of care
- ◆ The Patient Protection and Affordable Care Act of 2010 (ACA)
- ◆ Health policy issues, such as changes to Medicare and Medicaid
- ◆ Changing disease burden and rise of chronic disease
- ◆ Lack of a coordinated system of care
- ◆ Rising consumerism and patient-centered care
- ◆ Patient safety and quality concerns
- ◆ Demographic changes in the population
- ◆ Rapidly changing technologies and treatments
- ◆ Digital transformation
- ◆ Nontraditional providers
- ◆ Workforce issues
- ◆ Uninsured and underinsured populations
- ◆ Financial constraints of practices
- ◆ Changing forms of payment and reimbursement, driven in part by the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), which replaced the sustainable growth rate formula for physician reimbursement for services and includes
 - the Merit-Based Incentive Payment System and
 - advanced alternative payment models
- ◆ The political landscape, including the possible replacement or repeal of the ACA

THE PERFECT STORM

The “perfect storm” metaphor describes the coalescing of multiple events to create dramatic and unique consequences. Similar to the scenario depicted in a novel with this title by Sebastian Junger (2009), in which he describes a catastrophic storm off the coast of New Bedford, Massachusetts, some US healthcare observers would describe what is happening today in healthcare as a perfect storm. Elements of the perfect storm in the practice of medicine are shown in exhibit 1.11.

THE COST OF CARE

No factor has affected the sense of urgency to reform the US system of healthcare more than the cost. According to CMS (2015), US healthcare spending increased 5.3 percent to \$3.0 trillion in 2014, or \$9,523 per person. This growth was primarily the result of the coverage expansions under the ACA, particularly for Medicaid and private health insurance. Of course, the trend of rapidly increasing healthcare costs was seen long before the passage and enactment of the ACA: The share of the US economy devoted to healthcare spending was 17.5 percent, up from 17.3 percent in 2013 and almost 2.5 times that of other Western countries.

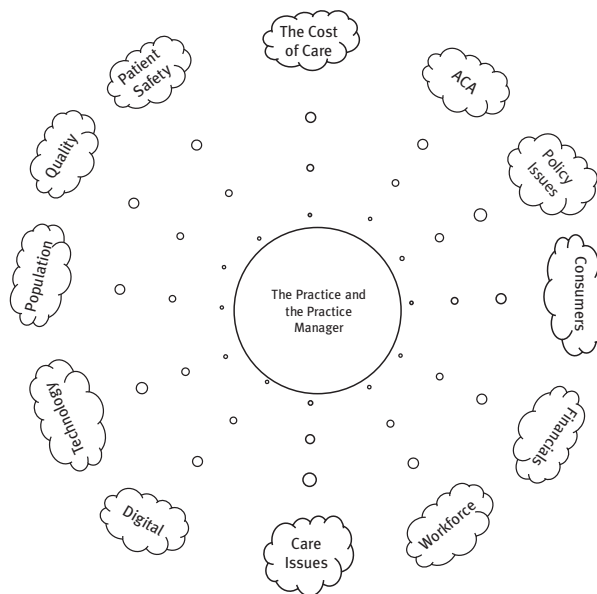


EXHIBIT 1.11

The Forces of Change Acting on Medical Practices: “The Perfect Storm”

The Institute of Medicine, a prestigious federal research and policy organization established in 1970 as part of the National Academy of Sciences, estimates that roughly a third of US healthcare dollars is wasted, amounting to between \$700 and \$800 billion. This enormous amount of waste is a result of unnecessary services, insufficient care that leads to readmissions and other repeat care, excess administrative costs, and increasing prices (IOM 2001). As one might expect, waste and the resulting excess expenditure in the US healthcare system is one area of tremendous criticism from many observers.

According to the Organisation for Economic Co-operation and Development (OECD 2015), an international economic group composed of 34 member nations based in Paris, the important factors that differentiate the US healthcare system from that of other countries are as follows:

- ◆ The United States has fewer physicians per capita than many other OECD countries have, at 2.4 practicing physicians per 1,000 people in 2010, below the OECD average of 3.1 practicing physicians per 1,000 people.
- ◆ The number of hospital beds in the United States was 2.6 per 1,000 people in 2009, whereas the OECD average was 3.4 beds.
- ◆ In the United States, life expectancy at birth increased by nearly nine years between 1960 and 2010, while it rose by more than 11 years on average in other OECD countries and by more than 15 years in Japan. In 2010, the average American lived to be 78.7 years—more than a full year below the average for other OECD countries. Cultural factors, lifestyle issues, and health habits play a role in this difference.

THE AFFORDABLE CARE ACT AND OTHER LEGISLATION

Since the passage of Medicare and Medicaid legislation in 1965, no other law has had a greater impact on the healthcare delivery system than the ACA. We discuss the ACA in detail in later chapters; here, we consider its impact on the healthcare system as well as the challenges and opportunities it brings.

The timeline shown in exhibit 1.2 includes a number of significant changes to healthcare regulations. As healthcare moved from a trade to a profession, its regulation increased. Every state now licenses the practice of medicine and enforces educational and training standards toward that end. Medical practices must comply with all regulations related to corporations and businesses in the state in which they operate and are subject to employment regulations by state and federal government.

Major pieces of legislation have been instrumental in shaping the direction of the practice of medicine in some important ways; they include the following:

- ◆ Corporate Practices Act
- ◆ Medicare and Medicaid legislation
- ◆ Balanced Budget Act of 1997, which created the resource-based relative value scale
- ◆ ACA
- ◆ MACRA

THE CHANGING DISEASE BURDEN AND THE RISE OF CHRONIC DISEASE

Disease Burden

Another significant issue facing the modern healthcare practice is how the burden of disease, or the impact of a health problem as measured by financial cost, mortality, morbidity, or other indicators, has changed and whether providers can keep up with these changes. In 1900, gastrointestinal infections, tuberculosis, pneumonia, and influenza were significant potential detriments to Americans' health and longevity. By 2010, however, cancer and heart disease became the major causes of mortality in the United States (Jones, Podolsky, and Greene 2012). Add to these conditions emerging diseases such as fibromyalgia and infections from the Zika virus—some of which may not have become known until recently—and the enormity of disease states medical practices must be equipped to treat is daunting.

The number of services provided in practice offices is substantial. Most individuals receive most of their care in a medical practice; the following statistics are just a sampling of the scale (NCHS 2015a):

- ◆ Number of drugs ordered or provided—2.6 billion
- ◆ Percentage of visits involving drug therapy—75.1 percent
- ◆ Most frequently prescribed therapeutic classes
 - Analgesics
 - Antihyperlipidemic agents
 - Antidepressants
- ◆ Percentage of persons using at least one prescription drug in the past 30 days—48.7 percent (2009–2012)
- ◆ Percentage of persons using three or more prescription drugs in the past 30 days—21.8 percent (2009–2012)

- ◆ Percentage of persons using five or more prescription drugs in the past 30 days—10.7 percent (2009–2012)

Chronic Disease

Almost half of US residents have at least one chronic condition, and more than 85 percent of those older than 65 have a chronic disease. As defined by the Centers for Disease Control and Prevention (CDC 2016a), chronic diseases are those that persist for three months or more. They generally cannot be prevented by vaccines or cured by medication, and they do not disappear spontaneously. Chronic disease is a major driver of cost because approximately 80 percent of healthcare resources expended are used by people with chronic conditions. Importantly, most of the treatment of these diseases occurs in the medical office setting.

According to the CDC (2016a), chronic diseases are responsible for seven out of ten deaths in the United States. Common chronic diseases include the following:

- ◆ Diabetes
- ◆ Heart disease
- ◆ Arthritis
- ◆ Kidney disease
- ◆ HIV/AIDS
- ◆ Lupus
- ◆ Multiple sclerosis

Because chronic disease cannot be cured, prevention is the key to reversing the cost, morbidity, and mortality trends currently seen in the healthcare system. Prevention is viewed as taking place in one of three levels:

1. Primary prevention seeks to avoid the onset of a disease using risk-reduction strategies such as altering behaviors or eliminating exposures that can lead to disease, or by enhancing resistance to the effects of exposure to a disease agent. An example of primary prevention is vaccination against flu.
2. Secondary prevention includes procedures that detect and treat so-called preclinical health status changes and controlling disease progression. An example of secondary prevention is mammography to detect early breast cancer.

3. Tertiary prevention reduces the impact of disease on the patient's functioning, longevity, and quality of life. An example of tertiary prevention is cardiac rehabilitation following a heart attack.

A Large and Growing Problem: The Number of People with Chronic Conditions

Boyle and colleagues (2001) projected a 165 percent increase in diabetes by 2050 to a prevalence of 7.2 percent of the population, affecting 29 million US residents. More recent evidence suggests those figures might be underestimations (CDC 2012). Unless that incidence curve is changed, US society will continue to see the devastating complications of this disease, including neuropathy (nerve damage), blindness, kidney failure, and heart disease.

Type 2 diabetes and many other chronic diseases are classified as “lifestyle diseases” because they are preventable and closely related to diet, exercise, and other lifestyle behaviors (Al-Maskari 2010).

In addition to causes such as obesity, observers expect to see a steady increase in the number of people with chronic conditions, in part because the US population is aging, and older people tend to have more chronic disease than younger people have.

Health-conscious behavior, including a focus on eating natural and chemical-free foods, has become a more popular way to combat chronic disease. Medicine has come a long way from the time of Hippocrates, but we are wise to remember what he said: “Let medicine be thy food and let food be thy medicine” (Lloyd 1950). That old wisdom must be reinserted into medical practice, at least to some degree.

LACK OF A COORDINATED SYSTEM OF CARE

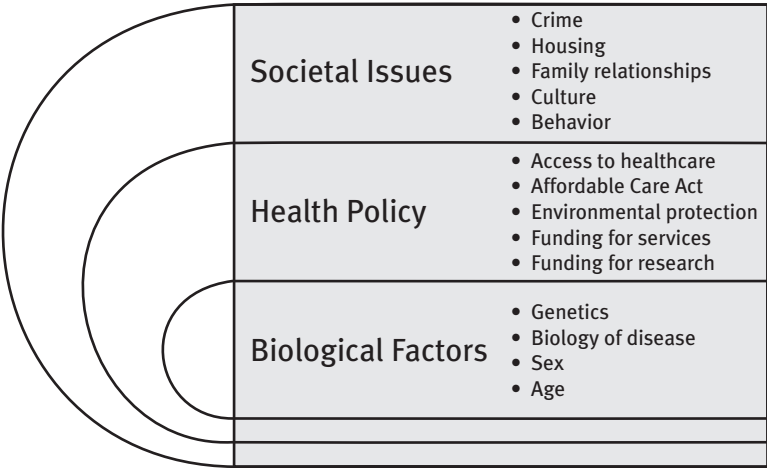
The US healthcare system currently does not pay adequate attention to the continuum of health services and the continuum of care. As human beings, we have healthcare concerns starting before we are born and present or emerging all the way until the end of our lives. An effective system of care needs to reflect all the stages of one's life.

In particular, end-of-life care is an issue that lacks a coordinated model in the United States. Many observers consider that the US healthcare delivery system does not deal with end-of-life care well. For example, a significant amount of money is spent at the end of life for care that, in many cases, is at best futile and at worst harmful to the patient and his or her family.

A coordinated system of care also should be concerned with the determinants of health. Exhibit 1.12 shows some major factors that determine health status. Healthcare is a component, but many others are present. The increased focus on the determinants of health points to the need for medical practices to be aware of and attend to the other

EXHIBIT 1.12

Determinants of Health



factors. Practices can do more in this area than they are currently; we discuss those ideas in later chapters.

RIISING CONSUMERISM

An area of medical practice and healthcare in general that also has received regular attention recently is the experience of the patient and his or her family. In considering this issue, one must first distinguish between two primary modes of practice as they relate to patient care.

Provider-Directed Care

The first is provider-directed patient care. In this model, which has been practiced for decades in the United States, the provider makes the vast majority of decisions and determines the type and extent of care the patient receives.

One concern related to provider-directed care is that the patient may have little understanding about the treatment being received and, therefore, be less committed to complying with instructions. For provider-directed healthcare to result in satisfactory outcomes, a patient must have both the desire and the ability to comply with treatment recommendations; thus, his or her individual circumstances are very much a part of the treatment equation.

Patient-Centered Care

The second model is patient-centric healthcare. In this model, the patient and his or her family play a central role in conjunction with the provider (Jones 2014). The provider offers multiple options to the patient, all of which are medically acceptable, and the patient assumes greater decision-making responsibility regarding the approach to treatment.

Patient-centered care can be seen in decisions related to treating prostate cancer. Prostate cancer is often a slow-growing tumor. In fact, more than 80 percent of men older than age 80 have prostate cancer, but the disease has limited medical consequences in many of these cases. Due to the slow-advancing nature of prostate cancer, two viable approaches are considered for its treatment. One approach, known as watchful waiting, involves careful monitoring of the patient's condition whereby aggressive intervention is not undertaken until definitive signs indicate the cancer is growing. The second option is aggressive therapy. This approach may involve surgery, chemotherapy, or other forms of treatment.

The question is, which to choose? According to a study published in the *New England Journal of Medicine* (Bill-Axelsson et al. 2014), the benefits of aggressive therapy were found to be highly dependent on the age of the patient and the type of prostate cancer. This finding gives enhanced credence to the notion of watchful waiting, which may also reduce unnecessary surgery, side effects, and cost.

One major initiative in population health management related to patient-centric care that involves the medical practice is the patient-centered medical home (PCMH).

The PCMH provides a starting place for the patient to receive all his or her nonemergency medical care. The model is characterized by 24/7 access to tightly coordinated care by a team of providers. Primary care is offered at the PCMH location, and other medical services are referred to specialists as appropriate (NCQA 2014).

Today, physicians are becoming increasingly patient centered. In addition to bringing the patient to the decision-making table, they are accommodating him or her in other ways, such as adopting alternate forms of communication, such as e-mail (Dalal et al. 2016).

PATIENT SAFETY AND QUALITY CONCERNS

In terms of patient safety and quality, the medical practice must ensure that it provides healthcare that meets the following standards (IOM 2001; AHRQ 2016):

- ◆ *Safe*—Protecting patients from being harmed by the care that is intended to help them. This goal includes the prevention of nosocomial infections, which are infections acquired in the hospital or healthcare setting; wrong-site surgery; medication errors; falls; and other harmful events.

Values

The beliefs and guidelines an individual uses to make choices when confronted with a situation.

- ◆ *Effective*—Providing services on the basis of scientific knowledge to all who can benefit and refraining from providing services to those not likely to benefit (i.e., avoiding underuse and misuse, respectively).
- ◆ *Patient centered*—Providing care that is respectful of and responsive to individual patient preferences, needs, and **values** and ensuring that patient values guide all clinical decisions.
- ◆ *Timely*—Reducing wait times for and eliminating harmful delays in care.
- ◆ *Efficient*—Avoiding waste, including waste of equipment, supplies, ideas, and energy.
- ◆ *Equitable*—Providing care that does not vary in quality because of personal patient characteristics such as race, gender, ethnicity, geographic location, and socioeconomic status.

DEMOGRAPHIC CHANGES

The Graying of America

The baby boom generation is retiring at the rate of about 10,000 people per day. In fact, the most rapidly growing segment of the US population is people older than age 85. US residents are living much longer than in the past, and as people age, they tend to need more healthcare. Although healthcare is a major contributor to longevity, it is not the only important contributor; other factors may have an even more significant impact on length of life (Nelson 2016). Only in the past 100 years has longevity been linked to healthcare. Before that time, life expectancy was largely determined by uncontrollable risk, such as infections, accidents, childbirth, starvation, and other similar events. For example, George Washington died from acute laryngitis, a condition that is easily treated today with an antibiotic (Knox 1933).

The graying of America will continue to be a significant issue for medical practices, as from age 65, on average, men and women will live almost 20 additional years (NCHS 2015b):

- ◆ Both sexes at 65 years—19.3 years of average additional life expectancy
- ◆ Men at 65 years—17.9 years of average additional life expectancy
- ◆ Women at 65 years—20.5 years of average additional life expectancy

CHANGES IN THE US POPULATION

The increase in immigration to the United States and the diversity of the population are major new considerations for medical practices. US providers encounter more languages, customs, and beliefs than in the past, making service to patients an increasing challenge. Mastering the nuances of diversity is essential for a modern practice to be successful.

RAPIDLY CHANGING TECHNOLOGIES AND RELATED TREATMENTS

The healthcare industry has seen a dramatic shift in the types and complexity of medical technology and the available treatments for patients. This unrelenting trend has led to commensurate complexity and increased cost, as well as the need for greater specialization in the delivery of services.

Digital Transformation and Nontraditional Providers

Not only has the science and technology of treatment changed, but the way healthcare is delivered is rapidly changing as well. A major transformational force in the medical practice has been the rise of digital media tools and the nontraditional provider who has been enabled by digital innovations.

Transformation often does not occur from within the industry being transformed, and healthcare is no exception. In 2015, more than 165,000 healthcare apps were available for smartphones and tablet computers, many of them targeted to the **ambulatory care** environment and most developed outside the healthcare industry (Terry 2015).

The medical practice must compete with entrants from the information technology industry, the retail pharmaceutical industry, the insurance industry, medical device companies, and Internet-based providers from around the world. The emergence of web-based providers has created a whole new mobile health industry known as mHealth.

The digital transformation of healthcare is not limited to the alternative delivery modes; it also has revolutionized the availability of information. One may consider this development to have a democratizing effect on healthcare, as information about virtually any condition, treatment, or procedure is available on the Internet. Like most innovations, it can carry both positive and negative consequences. Although a tremendous amount of information is available, this information is often of limited value unless it can be properly interpreted by a professional. A patient may be aware of information, but he or she may not understand it and certainly will not be able to apply it to the situation at hand.

Another major issue regarding Internet-based information is its accuracy. Physicians are often concerned that patients access information that is either misunderstood or, in some cases, blatantly inaccurate, which can cause difficulties in the physician–patient

Ambulatory care
Healthcare services provided to patients on an outpatient basis, rather than by admission to a hospital or another healthcare facility.

relationship. The patient may be skeptical of information provided by the physician because it conflicts with inaccurate information the patient obtained from another source and believes to be true. One solution to this problem is to provide patients with high-quality sources for Internet-based information about their condition and encourage them to obtain more detailed information. Therefore, the Internet can be an educational resource for the physician practice when proactively embraced and used properly.

WORKFORCE ISSUES

For the first time in US history, four generations of employees are in the workforce, and that workforce is becoming increasingly diverse in many other areas as well. These factors present unprecedented challenges, as each generation and ethnic group brings its own temperament; belief system; and preferences for structure, authority, and workplace interaction (Knight 2014).

One issue that arises from intergenerational and ethnic diversity is that people tend to focus on differences instead of looking for similarities to forge collaborations and embrace new ideas. This is a key consideration, as the process of collaboration allows people to produce the best outcome possible.

How do we get multiple generations to work effectively in a collaborative fashion? Everyone has much to contribute and share, and practice managers must devise ways for the organizations to tap the power of diversity. One means to do so is to focus on the shared objective in light of the value each generation and group brings to the work environment. By making the most of our diverse workforce, practice managers and leaders can combine new concepts and innovations to solve problems together.

FINANCIAL CONSTRAINTS

By definition, constraints limit the scope, the time, or the quality of the product or service being provided. As resources are limited, decisions must be made in an effort to optimize the constraint relationship and thereby deliver optimum outcomes. Of course, financial resources are no different. Financial constraints limit the freedom to act and provide support for people and projects in the organization (Travis et al. 2004).

In a later chapter, we delve into the issues related to fighting financial constraints in more detail. Here, we consider the unique nature of healthcare financing as a source of concern for the practice manager. Although practices set their own fees, in most cases healthcare is paid for by so-called third-party payers, such as Medicare. Medicare establishes reimbursement limits for services, effectively setting the fees for the practice. Similarly, in the case of nongovernmental payers, such as insurance companies, fees may be negotiated, but negotiation is often limited by the size and market power of the practice. Small practices

may be dealt with on a take-it-or-leave-it basis. Most enterprises have their actual payment rate or price established by external **stakeholders**; these represent a unique and challenging aspect of medical practice management.

As in a society, practice managers and leaders must balance the ideal outcome with what is possible given that all resources are limited to some extent. Doing so requires a combination of personal responsibility and practice accountability.

Stakeholder

Individual or group that has a vested interest in the practice.

LEADERSHIP CHALLENGES

The list of challenges discussed to this point is significant. To address them, medical practice leaders and managers must be adept at guiding change in their practice.

THE REIMBURSEMENT PARADIGM SHIFT

The paradigm of medical practice is currently experiencing a seismic shift. Most businesses and industries undergo transitions of their business and operational models over time as the environment of the industry changes. However, the current **paradigm shift** means medical practices will be paid differently than in the past, placing a lot of pressure on how practices adapt to other changes occurring in the healthcare system, such as the way medical care is delivered.

Paradigm shift

A change in the way a practice views its business.

What Happens to Organizations When a Paradigm Shift Occurs in an Industry?

A paradigm is the way stakeholders think an industry should behave—the model they hold in their mind. This model has a strong hold, like a set of strong beliefs; thus, changing a paradigm is difficult.

A paradigm shift is a major change in the way the world thinks about something. One example of a paradigm shift occurred in the photography industry when cameras became digital. Kodak, a company with a history spanning more than a hundred years, was fixated on film and slides, and the cameras that used these photographic modes. As digital photography became widely adopted, Kodak refused to act on the paradigm shift and continued to focus on film and cameras and more film. Essentially, Kodak's leaders forgot that the business they were in was not about photography but about people. And people—consumers—had become less interested in film cameras; they were more interested in recording their lives and preserving memories. The modality mattered less to them than the activity. The irony is that Kodak invented digital photography but chose not to pursue the technology for the commercial market (Lucas and Goh 2009). Steve Jobs of Apple Computer saw the potential of making the digital camera part of the popular iPhone, providing an effortless way to take pictures that met the needs of most photography consumers.

Telemedicine

Involves the use of electronic communication and information technologies to provide or support clinical care at a distance.

Pay for performance (P4P)

Mechanism whereby providers are reimbursed on the basis of their level of success in meeting specific performance measures.

Revenue

The amounts received by or due to a practice for goods or services it provides to customers. Receipts are cash revenues; revenues may also be represented by accounts receivable.

This is an example of the *second curve*. This concept was introduced by healthcare futurist Ian Morrison in 1996. He posits that service and product innovation go through a series of curves. Each curve represents a product or service that matures over time and is then replaced by either a new or improved service or product. Entities that operate in an industry undergoing a paradigm shift must move past the first curve or be doomed to failure. In healthcare, the second curve is represented by **telemedicine**, web-based medical services, on-demand medical services, and new information technologies used to analyze and understand patient populations and their needs. Those practices that fail to enter the second curve will become obsolete as well. An important aspect of paradigm shifts is that they cause participants' knowledge base to shrink; every player starts over to build a new model of care.

The transition point from the first curve to the second curve is called the strain. Here, the demand for and provision of healthcare shift from being experienced predominantly the old way to predominantly the new way, for example, from office visits to virtual visits. The strain is a difficult point in a practice's operational life, and many businesses fail during this period. The organization must function in both paradigms simultaneously, aiming to move safely from the first curve to the second curve. Because the US healthcare system is changing incrementally from volume-based reimbursement (the old paradigm) to value-based reimbursement or **pay for performance** (the new paradigm), the second curve challenge for medical practices is that they must continue to operate in a volume-based system while slowly transitioning to the value paradigm. At the time of this writing, the majority of **revenue** for medical practices remains volume based (Center for Healthcare Quality and Payment Reform 2013).

What Is Value?

Value is a function of cost and quality, as demonstrated by the following equation:

$$\text{Value} = f(\text{Cost/Quality})$$

In practical terms, value is what we are willing to pay for: what we see as a fair exchange of our resources (money) for something we receive (healthcare). Cost comprises all the economic and noneconomic input needed to receive the service. It includes money, of course, but also such factors as waiting time, access issues, perception of caring, and many others that may be particular to the individual expending the cost.

Quality is a measure of how good the service is. In healthcare, it can be determined by many factors. Some questions that may help ascertain quality include the following:

- ◆ Did I get well?
- ◆ Was the service timely?

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- ◆ Were the staff and physicians friendly?
- ◆ Do I understand what the follow-up treatment entails?

Medical practices often quantify quality by metrics such as the following:

- ◆ Time to third available appointment (a measure of appointment availability)
- ◆ Number of calls that go unanswered (a measure of access)
- ◆ Waiting time (a measure of timeliness)
- ◆ Whether follow-up on lab and imaging services took place as needed, and length of time to follow-up (a measure of thoroughness)
- ◆ Patient satisfaction scores (a measure of the patient's perception of overall quality)

DETERMINANTS OF HEALTH

Another important issue in practice management, and healthcare administration in general, is understanding the determinants of health. (Review the select factors listed in exhibit 1.12 that go into determining health.) Many determinants are outside of individuals' control, such as in what generation or era one is born and one's biological sex, race, and other genetic and biological factors. Others, including individual behaviors; family and community networks; living and working conditions; and broad social, economic, cultural, health, and environmental conditions, are controllable to greater or lesser degrees. All these determinants can have a tremendous impact on overall health.

Every practice must consider its role in mitigating these issues, which go beyond what are traditionally considered to be "healthcare issues." Practices should engage patients in improving self-care and self-management, and they must be leaders and advocates for change in the lifestyle behaviors that have led to increases in the disease burden.

Furthermore, public policy plays a major role in health determinants, such as equity of care, and healthcare professionals should advocate for improvements to health policy that influences these issues.

CHANGES IN HEALTH COVERAGE

Since health insurance became commonplace after World War II, numerous changes have occurred in how healthcare is paid for. Originally, health insurance was primary indemnity coverage. This coverage provided payment to physicians or repaid the patient for the

out-of-pocket costs incurred by the patient in seeking medical treatment as set forth in the policy.

Managed care became common in the 1980s and has gone through a number of transitions over the years. A relatively recent invention in health insurance, the consumer-directed health plan (CDHP), is having a profound impact on the medical environment. CDHPs provide coverage for medical services, but only after a substantial out-of-pocket deductible has been met by the patient. This requirement has led some patients to delay care or fail to pay the provider for care received because they do not have sufficient funds to cover the deductible. The latter results in the provider or medical practice encountering increasing amounts of **bad debt**.

Healthcare finance is covered in detail in a later chapter.

Bad debt

Amount owed to a practice that will not be paid.

Environmental factors

Forces that influence the business but are external to the business itself, such as public policy, regulations, and economic conditions.

CHANGES IN ORGANIZATIONAL STRUCTURE

In modern times, the predominant form of medical practice has been solo practice or small practice groups and partnerships. However, as the US healthcare system has evolved in response to value-based reimbursement and other **environmental factors**, consolidation of medical practices is occurring. Much more about this topic is covered throughout the remainder of the book.

THE COMPLEXITY OF THE HEALTHCARE ENVIRONMENT

The healthcare environment has become highly complex and will only continue to increase in complexity. Numerous new technologies and services as well as increasing volumes of information lead to new management challenges. For example, as discussed in depth in chapters 6 and 7, the move from using the International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM) to ICD 10 for documenting diagnostic codes for reimbursement increased the number of codes from approximately 14,000 to more than 69,000. In addition, an entirely different set of codes, Current Procedural Terminology codes, recently increased to more than 71,000 codes from the previous set of 3,824 codes (CDC 2015).

SCIENTIFIC AND TECHNOLOGICAL CHANGE

The technological achievements in healthcare have been nothing short of remarkable. Consider that just a few years ago major surgery was a common treatment option for a person suffering from stomach ulcers, requiring a hospital stay and posing surgical risk. Today, many people with stomach ulcers can be treated with a simple over-the-counter medicine known as a proton pump inhibitor.

Another example of technological advances is related to diagnostic imaging. Until the introduction of advanced imaging technology such as computed tomography, ultrasound, and magnetic resonance imaging, exploratory surgery was often necessary to determine the patient's ailment.

THE CLOUD OF ANXIETY

All this change and attendant pressure on the modern medical practice has created a “cloud of anxiety,” as illustrated in exhibit 1.13. With so many variables to address and the prospects of disruption to deal with on a daily basis, the seemingly constant uncertainty requires a new type of leader for this new era, one who can accurately interpret reality, explain the present, paint a compelling vision of the future, and lead the necessary change. To ensure the success of the future medical practice, the practice manager must be this kind of leader.



EXHIBIT 1.13
The Cloud of
Anxiety

Interpret reality in an understandable way.

Explain the present in clear and factual terms.

Paint a compelling picture of the future.

Develop followers, and help them become problem solvers.

Lead change, and move toward the vision of the future.

EXHIBIT 1.14
What Leaders
Must Do

DISCUSSION QUESTIONS

1. Discuss the importance of the medical practitioner to the healthcare system.
2. Describe several of the forces of change affecting the medical practice.
3. What are some challenges faced by the medical practice manager?
4. The metaphor “the perfect storm” has been used to describe the changes in healthcare. What does it mean in the healthcare context?
5. Describe and discuss several of the models of medical practice.

REFERENCES

- Agency for Healthcare Research and Quality (AHRQ). 2016. “The Six Domains of Health Care Quality.” Accessed February 24. <https://cahps.ahrq.gov/consumer-reporting/talking-quality/create/sixdomains.html>.
- . 2011. “The Number of Nurse Practitioners and Physician Assistants Practicing Primary Care in the United States.” AHRQ Pub. No. 12-P001-3-EF. Rockville, MD: AHRQ.
- Al-Maskari, F. 2010. “Lifestyle Diseases: An Economic Burden on the Health Services.” Published July. <http://unchronicle.un.org/article/lifestyle-diseases-economic-burden-health-services/>.
- American Association of Colleges of Osteopathic Medicine (AACOM). 2016. “U.S. Colleges of Osteopathic Medicine.” Accessed January 29. www.aacom.org/become-a-doctor/us-coms.
- American Association of Medical Colleges (AAMC). 2016. “Medical Schools.” Accessed January 29. www.aamc.org/about/membership/378788/medicalschoools.html.
- American College of Healthcare Executives (ACHE). 2016. “About ACHE.” Accessed January 31. www.ache.org/aboutache.cfm.
- American Medical Association (AMA). 2017. “RBRVS Overview.” Accessed April 20. www.ama-assn.org/rbrvs-overview.
- Atchinson, B. K., and D. M. Fox. 1997. “The Politics of the Health Insurance Portability and Accountability Act.” *Health Affairs* 16: 3146–50.

- Ball, C. 1996. "James Young Simpson, 1811–1870." *Anaesthesia and Intensive Care* 24 (6): 639.
- Bankston, J. 2004. *Joseph Lister and the Story of Antiseptics (Uncharted, Unexplored, and Unexplained)*. Bear, DE: Mitchell Lane.
- Barnard, M. 2011. *Defining Moments*. Cape Town, South Africa: Random House Struik.
- Bernstein, R. B. 2003. *Out of the Blue: A Narrative of September 11, 2001*. New York: Times Books.
- Berwick, D. M., T. W. Nolan, and J. Whittington. 2008. "The Triple Aim: Care, Cost, and Quality." *Health Affairs* 27 (3): 759–69.
- Bill-Axelson, A., L. Holmberg, H. Garmo, J. R. Rider, K. Taari, C. Busch, S. Nordling, M. Häggman, S.-O. Andersson, A. Spångberg, O. Andrén, J. Palmgren, G. Steineck, H.-O. Adami, and J.-E. Johansson. 2014. "Radical Prostatectomy or Watchful Waiting in Early Prostate Cancer." *New England Journal of Medicine* 370: 932–42.
- Boyle, J. P., A. A. Honeycutt, K. M. Narayan, T. J. Hoerger, L. S. Geiss, H. Chen, and T. J. Thompson. 2001. "Projection of Diabetes Burden Through 2050: Impact of Changing Demography and Disease Prevalence in the U.S." *Diabetes Care* 24 (11): 1936–40.
- Buchmueller, T. C., and A. C. Monheit. 2009. "Employer-Sponsored Health Insurance and the Promise of Health Insurance Reform." NBER Working Paper Number 14839. Cambridge, MA: National Bureau of Economic Research.
- Bundorf, M. K. 2012. "Consumer-directed Health Plans: Do They Deliver?" Published October. www.rwjf.org/en/library/research/2012/10/consumer-directed-health-plans.html.
- Burke, J. 1985. *The Day the Universe Changed*. London: London Writers.
- Center for Healthcare Quality and Payment Reform. 2013. "Payment Reform Barrier #3: Physician Compensation Based on Volume, Not Value." Published February 28. <http://chqpr.org/blog/index.php/2013/02/payment-reform-barrier-3-physician-compensation-based-on-volume-not-value/>.
- Centers for Disease Control and Prevention (CDC). 2016a. "Chronic Disease." Updated May 24. www.cdc.gov/chronicdisease/.

- . 2016b. “Zika Virus.” Updated January 29. www.cdc.gov/zika/index.html.
- . 2015. “International Classification of Diseases, (ICD-10-CM/PCS) Transition—Background.” www.cdc.gov/nchs/icd/icd10cm_pcs_background.htm.
- . 2014. “2014–2016 Ebola Outbreak in West Africa.” Accessed January 22, 2016. www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/.
- . 2012. “Increasing Prevalence of Diagnosed Diabetes—United States and Puerto Rico, 1995–2010.” *Morbidity and Mortality Weekly Report*. Published November 16. www.cdc.gov/mmwr/preview/mmwrhtml/mm6145a4.htm.
- Centers for Medicare & Medicaid Services (CMS). 2015. “National Health Expenditures 2014 Highlights.” Accessed April 20, 2017. www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf.
- Cobban, A. B. 1999. *English University Life in the Middle Ages*. Columbus: Ohio State University Press.
- Coggeshall, L. T. 1965. *Planning for Medical Progress Through Education*. Evanston, IL: Association of American Medical Colleges.
- Dahm, R. 2008. “Discovering DNA: Friedrich Miescher and the Early Years of Nucleic Acid Research.” *Human Genetics* 122 (6): 565–81.
- Dalal, A. K., P. C. Dykes, S. Collins, L. S. Lehmann, K. Ohashi, R. Rozenblum, D. Stadel, K. McNally, C. R. C. Morrison, S. Ravindran, E. Mlaver, J. Hanna, F. Chang, R. Kandala, G. Getty, and D. W. Bates. 2016. “A Web-Based, Patient-Centered Toolkit to Engage Patients and Caregivers in the Acute Care Setting: A Preliminary Evaluation.” *Journal of the American Medical Informatics Association* 23 (1): 80–87.
- Debré, P. 2000. *Louis Pasteur*. Baltimore, MD: Johns Hopkins University Press.
- Deming Institute. 2016. “The Deming System of Profound Knowledge® (SoPK).” Accessed January 1. <https://deming.org/theman/theories/profoundknowledge>.
- DiMatteo, M. R. 1998. “The Role of the Physician in the Emerging Health Care Environment.” *Western Journal of Medicine* 168 (5): 328–33.
- Dorsey, J. L. 1975. “The Health Maintenance Organization Act of 1973 (P.L. 93-222) and Prepaid Groups.” *Medical Care* 13 (1): 1–9.

- Flexner, A. 1910. *Medical Education in the United States and Canada*. New York: Carnegie Foundation for the Advancement of Teaching.
- Garrison, D. H., and M. H. Hast (trans.). 2014. *The Fabric of the Human Body*. Basel, Switzerland: Karger.
- Gawande, A. 2016. “An Evening with Dr. Atul Gawande.” Live performance. Charlotte, NC, February 25.
- . 2014. *Being Mortal*. New York: Metropolitan.
- Glasser, O. 1933. *Wilhelm Conrad Röntgen and the Early History of the Roentgen Rays*. London: John Bale, Sons and Danielsson.
- GreekMedicine.net. 2016. “Aristotle.” Accessed January 31. www.greekmedicine.net/whos_who/Aristotle.html.
- Hargrave, E., J. Hoadley, K. Merrelli, and J. Cubansk. 2007. “Medicare Part D 2008 Data Spotlight: Specialty Tiers.” Menlo Park, CA: Kaiser Family Foundation.
- Harvey, W. 1993. *The Circulation of the Blood and Other Writings*. Translated by K. J. Franklin. London: Orion.
- Heiney, P. 2003. *The Nuts and Bolts of Life: Willem Kolff and the Invention of the Kidney Machine*. Charleston, SC: History Press.
- Hinrichs’sche, W., I. Wreszinski, and J. C. Umschrift. 1913. *Der Papyrus Ebers*. Leipzig, Germany: Buchhandlung.
- Hurry, J. B. 1978. *Imhotep*, 2nd ed. New York: AMS Press.
- Institute of Medicine (IOM). 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academies Press.
- Johns, C. H. W. (trans.). 2000. *Hammurabi, King; The Oldest Code of Laws in the World*. Clark, NJ: Lawbook Exchange.
- Jones, D. S., S. H., Podolsky, and J. A. Greene. 2012. “The Burden of Disease and the Changing Task of Medicine.” *New England Journal of Medicine* 366: 2333–38.
- Jones, K. B. 2014. “Patient-Centered Care Versus Patient-Directed Care.” Published December 12. www.physicianspractice.com/blog/patient-centered-care-versus-patient-directed-care.

- Jones, W. 1979. *Philosophy and Medicine in Ancient Greece*. New York: Arno Press.
- Jones, W. H. S. 1868. *Hippocrates Collected Works I*. Cambridge, MA: Harvard University Press.
- Junger, S. 2009. *The Perfect Storm: A True Story of Men Against the Sea*. New York: W. W. Norton.
- Kaiser Family Foundation. 2017. "Total Professionally Active Physicians." Published April. <http://kff.org/other/state-indicator/total-active-physicians/>.
- Kane, C. 2014. "AMA Policy Research Perspectives, Updated Data on Physicians Practice Arrangement: Inching Toward Hospital Ownership." Chicago: American Medical Association.
- Keating, C. 2009. *Smoking Kills: The Revolutionary Life of Richard Doll*. Oxford, UK: Signal.
- Knabb, R. D., J. R. Rhome, and D. P. Brown. 2005. *Hurricane Katrina*. Miami, FL: National Hurricane Center.
- Knight, R. 2014. "Managing People from 5 Generations." Published September 25. <https://hbr.org/2014/09/managing-people-from-5-generations>.
- Knox, J. H. M., Jr. 1933. "The Medical History of George Washington, His Physicians, Friends and Advisers." *Bulletin of the Institute of the History of Medicine* 174–91.
- Koprowski, H. 1960. "Historical Aspects of the Development of Live Virus Vaccine in Poliomyelitis." *British Medical Journal* 2 (5192): 85–91.
- Lauterbur, P. C. 1973. "Image Formation by Induced Local Interactions: Examples of Employing Nuclear Magnetic Resonance." *Nature* 242: 190–91.
- Ligon, B. L. 2004. "Penicillin: Its Discovery and Early Development." *Seminars in Pediatric Infectious Diseases* 15 (1): 52–57.
- Lloyd, G. E. R. (ed.). 1950. *Hippocratic Writings*. Translated by J. Chadwick. London: Penguin.
- Lucas, H. C., and J. M. Goh. 2009. "Disruptive Technology: How Kodak Missed the Digital Photography Revolution." *Journal of Strategic Information Systems* 18: 46–55.

- Medical Group Management Association (MGMA). 2016a. "About MGMA." Accessed February 16. www.mgma.com/about/overview.
- . 2016b. "Body of Knowledge for Medical Practice Management." Accessed February 16. www.mgma.com/education-certification/certification/body-of-knowledge/medical-practice-management-body-of-knowledge.
- Morrison, I. 1996. *The Second Curve: Managing the Velocity of Change*. New York: Ballantine.
- National Center for Complementary and Integrative Health. 2009. "Americans Spent \$33.9 Billion Out-of-Pocket on Complementary and Alternative Medicine." Published July 30. <https://nccih.nih.gov/news/2009/073009.htm>.
- National Center for Health Statistics (NCHS). 2015a. "International Classification of Diseases, (ICD-10-CM/PCS) Transition - Background." Accessed February 4, 2016. www.cdc.gov/nchs/icd/icd10cm_pcs_background.htm.
- . 2015b. "Older Persons' Health." Accessed March 1, 2016. www.cdc.gov/nchs/fastats/older-american-health.htm.
- National Committee for Quality Assurance (NCQA). 2014. *Standards and Guidelines for NCQA Patient Centered Medical Homes 2014*. Washington, DC: NCQA.
- National Human Genome Research Institute. 2010. "The Human Genome Project Completion: Frequently Asked Questions." Updated October 30. www.genome.gov/11006943.
- Nelson, T. D. 2016. "The Age of Ageism." *Journal of Social Issues* 72: 191–98.
- Nunn, J. F. 2002. *Ancient Egyptian Medicine*. Norman: University of Oklahoma Press.
- Organisation for Economic Co-operation and Development (OECD). 2015. "Focus on Health Spending OECD Health Statistics 2015." White paper. Paris: OECD.
- Palucka, T. 2002. "Overview of Electron Microscopy." Updated December 10. http://authors.library.caltech.edu/5456/1/hrst.mit.edu/hrs/materials/public/ElectronMicroscope/EM_HistOverview.htm.
- Rashdall, H. 1895. *The Universities of Europe in the Middle Ages*, 3 vols., revised by F. M. Powicke and A. B. Emden. Oxford, UK: Clarendon.

- Roguin, A. 2006. "Rene Theophile Laennec (1781–1826): The Man Behind the Stethoscope." *Clinical Medicine and Research* 4 (3): 230–35.
- Rosenberg, C. E., and M. J. Vogel (eds.). 1979. "The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth-Century America." *Perspectives in Biology and Medicine* 20 (4): 485–506.
- Rothstein, W. G. 1972. *American Physicians in the Nineteenth Century: From Sect to Science*. Baltimore, MD: Johns Hopkins Press.
- Sarton, G. 1951. *Galen of Pergamon*. Lawrence: University of Kansas Press.
- Social Security Administration. 2016. "Vote Tallies for Passage of Medicare in 1965." Accessed February 1. www.ssa.gov/history/tally65.html.
- Stevens, R. 1971. *American Medicine and the Public Interest*. New Haven, CT: Yale University Press.
- Terry, K. 2015. "Number of Health Apps Soars, but Use Does Not Always Follow." Published September 18. www.medscape.com/viewarticle/851226.
- Travis, P., S. Bennett, A. Haines, T. Pang, Z. Bhutta, A. A. Hyder, N. R. Pielemeier, A. Mills, and T. Evans. 2004. "Overcoming Health-Systems Constraints to Achieve the Millennium Development Goals." *Lancet* 364 (9437): 900–906.
- US Department of Health & Human Services (HHS). 2010. "About the Affordable Care Act." Accessed January 18, 2016. www.hhs.gov/healthcare/about-the-law/index.html.
- Wang, Y. A., and M. Barry. 2016. "Zika Outbreak Bears an Eerie Resemblance to the Spread of Ebola." Published February 9. www.latimes.com/opinion/op-ed/la-oe-0209-wang-barry-zika-ebola-20160209-story.html.
- Winkelstein, W., Jr. 1992. "Not Just a Country Doctor: Edward Jenner, Scientist." *Epidemiology Review* 14 (1): 1–15.