CHAPTER

2

Healthcare Professionals and Interdisciplinary Care

Suvapun Bunniran and David J. McCaffrey III*

Case Scenario

Bob Jones has been a patient of WeCare Pharmacy for almost 20 years. Two months ago, he was diagnosed with stage IV lung cancer. After discussing his options with his oncologist and after careful consideration and discussions with his family Mr. Jones decided against treatment and began the process of preparing for his death. His wife, Agnes, visits the pharmacy regularly to collect prescriptions and other healthcare needs for herself and her husband. On one visit, she mentions that lately Bob has been experiencing a great deal of pain and it has affected his ability to sleep as well as his mood. She says that Bob no longer wants his children and grandchildren to visit and that he barely communicates any longer because of his level of discomfort. The pharmacist empathizes with Mrs. Jones and offers to contact Bob's doctor to discuss the problem and to find a solution. Two days later someone from the pharmacy contacts Agnes Jones and informs her that a new prescription for pain medication is ready for Mr. Jones and she can pick it up at her earliest convenience.

LEARNING OBJECTIVES

Upon completion of this chapter, the student shall be able to:

- Discuss the characteristics of a profession and how professions are distinguished from other occupations
- Describe the education/training, scope of practice, and availability of various healthcare professions
- Compare and contrast multidisciplinary care and interdisciplinary care
- Recognize the various stages of the pharmacist–physician collaborative working relationship and identify strategies available to the pharmacist to establish these cooperative arrangements with physicians

*With acknowledgment to Alice M. Sapienza.

- Describe continuity of care and the medical home and the role that a pharmacist can and should play in this process
- Define quality and describe the role of interdisciplinary care in the quality movement
- Describe the three ways that healthcare quality is reported and how interested parties might use this information
- Describe how continuous quality improvement efforts influence the manner in which healthcare professionals practice
- Explain the positive and negative attributes of pay for performance
- Describe how technology would influence interdisciplinary care
- Identify quality measurements and organizations involved in collecting and disseminating this information

CHAPTER QUESTIONS

1. How it is that professions and occupations differ? Does health care constitute a special case of a profession?
2. What are the primary similarities shared between pharmacy and the other healthcare professions? Major differences?
3. How would you explain to a patient the benefits of interdisciplinary care over multidisciplinary care?
4. What are the challenges that pharmacists face when attempting to establish collaborative practice agreements with other healthcare providers?
5. How is it that a medical home will affect continuity of care?
6. What is healthcare quality to a patient, to a healthcare provider, and to a payer?
7. How might the technologies that are currently being developed change the landscape of pharmacy practice?

INTRODUCTION

Health care requires the interaction among many different providers of care and ancillary personnel. Pharmacists can and do play an important role in connecting these different providers; pharmacists also fulfill this role well because of the opportunity for interaction with the patient (e.g., the community pharmacist may see a patient as often as once per month or even more). Moreover, pharmacists have opportunities to influence the health and well-being of patients through the provision of patient-centered services (e.g., medication therapy management); however, these services rarely are provided without the pharmacist's direct interaction with other healthcare providers. As such, this chapter will present an overview about how pharmacists may work with different healthcare occupations while providing patient care. Moreover, information about many of the principle healthcare occupations with which pharmacy will interact will be presented. While this number potentially is great, the space available in the chapter is not, and as a result, the chapter will focus on the healthcare-related occupations with which pharmacy has the greatest interaction. The authors suggest that readers interested in other healthcare-related occupations visit the *Occupational Outlook Handbook* produced by the Bureau of Labor Statistics for an overview of these occupations (www.bls.gov) as well as an annual update on the healthcare occupations presented herein. The chapter

will conclude with a discussion of a variety of issues affecting the pharmacy and the healthcare system currently and in the immediate future.

PROFESSIONS

While the term *professional* is used almost without thought, defining a professional in exacting terms can be quite difficult. In health care, do all providers deserve the title, "professional?" Over the years, various healthcare occupations have been considered just that—an occupation without professional status; pharmacy was one of those healthcare occupations. But exactly what are the characteristics that allow an occupation to be elevated to the level of a profession? Research as to what constitutes a profession has largely revolved around evaluating the qualities of recognized professions (e.g., law, medicine, and clergy) (Klass, 1961). While it was generally recognized that there was no one test for an occupation being a profession, occupations that were considered professions shared certain characteristics. These shared attributes have come to define which occupations society considers as professions.

While it is recognized generally that professions exist to serve society, merely providing services that the public needs and demands does not define a profession. The literature reveals five characteristics that are common to occupations considered professions; these include systematic theory and body of knowledge, professional authority and special privileges, community sanction and social utility, ethical codes and internal control, and professional culture and organizations (Buerki & Vottero, 1996). *Systematic theory and body of knowledge* is an important first distinction between the profession and the public whom it serves (Mrtek & Catizone, 1989). It results from the didactic education received in the various professional schools and continues throughout the life of the professional as he or she is required to maintain competence through continuing education. Members of professions are expected to have extensive theoretical knowledge and to use that knowledge (and the associated skill) when they provide service to society.

Professional authority and special privileges refer to the professional's ability to practice in his or her area of expertise as well as being afforded the opportunity to provide services to the public, services that the members of the public cannot presumably perform for themselves (Buerki & Vottero, 1996). The client surrenders a portion of his or her autonomy to the professional, because the client acknowledges the superior competence of the professional to do the job that the client cannot do. The client trusts the professional's judgment about which course of action will best meet the client needs.

It is believed that professions serve a socially necessary function (*social utility*) and provides a service that is of great importance to society. As such, the function of a profession is sanctioned (*community sanction*) by society in a number of different ways. The most widely recognized sanctioning is the system of licensure (Buerki & Vottero, 1996). Licenses for professions are granted by various professional boards, and these boards exist to protect society. That being said, most boards include members of society in addition to members of the profession. Another recognized community sanction is the restriction on the use of a professional title.

While society is beholden to the laws that govern the land, a profession has *ethical codes and internal control*. The professional accepts responsibility and is accountable through not only the law but also his or her profession. This is accomplished through

formal and informal internal controls (e.g., codes of ethics). A profession accepts the responsibility to maintain a standard of conduct beyond the law. Despite the obvious importance of ethical codes and internal control to the value of a profession, the most difficult part about codes of ethics is enforcement. Thus the inclusion of a code of ethics as an attribute of a profession is probably the weakest part of attribute theory of professions. This is surprising somewhat given that the most effective technique for avoiding public (external) control over the profession is for the profession to maintain strong control over its members (Goode, 1957). Members of professions enjoy relative freedom from direct on-the-job supervision and from direct public scrutiny. However, when supervision does exist, the supervisor of a professional typically is a member of the same profession.

The *professional culture* is made up of values, norms, and symbols. Values are the central beliefs of a profession; the values of a profession usually include a belief in the importance and merit to society of the profession's unique expertise and a belief that the service cannot be better provided by another occupation. Another belief underlying the professions value system is the belief that the service provided is essential, in that society would suffer if the service was withdrawn. Values are the central beliefs of a profession, and norms are the accepted ways of social behavior within the profession. Symbols are often used to identify the calling of the profession. Symbols include a specific insignia, vocabulary, and dress (e.g., white lab coat).

Professions also rely upon a network of *organizations* that promote the profession and serve a number of other functions. These organizations may assist with licensure, provide continuing education, and promote a sense of collegiality. Professional organizations perform an important function for society, connecting members of the profession to one another and to other important groups, such as other professions, educational institutions, government bodies, and consumer groups. Without professional organizations, communication would be very difficult, if not impossible. Professional organizations are involved in activities that promote the interests of the profession.

Lastly, it is believed that a profession is required to render an individualized, unstandardized service directly to clients (Buerki & Vottero, 1996). Efforts made by the various healthcare professions to improve the quality of the services provided through standardization does not mean that healthcare providers do not meet this criterion. Many of the current efforts surrounding patient safety revolve around creating processes such that errors may be reduced or eliminated. This is a laudable goal; however, patients present with an almost infinite number of signs, symptoms, and personal characteristics that require that these processes be executed with the patient's best interest in mind. That best interest can only be determined by a thorough understanding of the patient's needs and wants and requires flexibility on the part of the provider to change as the patient's needs and/or wants change. The nature of health care makes the requirement of providing individualized and unstandardized service to clients seem logical; however, it may be said that healthcare providers sometimes fail to treat the patient as an individual.

Pharmacists

The profession of pharmacy has experienced a marked transformation over the past 50 years. Today's pharmacists complete more years of formal education and are much more likely to complete postgraduate training and as a result, have abilities that many do not realize and many would have never imagined would be possible. Pharmacy

practice is evolving from a profession whose primary responsibility was supervising the distribution of medications to one where its members are providing medication therapy management services and advising patients on disease prevention and management (Paolini & Rouse, 2010). A complete discussion of the historical development of the profession of pharmacy as well as the current practice philosophies, roles, and responsibilities will be presented in detail in Chapter 3; however, an appreciation of the nature of collaborative relationships between healthcare providers must begin with a rudimentary understanding of the background and characteristics of one's own profession—in this case, pharmacy.

Educational Requirements

Pharmacy education has experienced many changes since its inception. Early pharmacy practitioners in the United States were trained as apprentices of experienced apothecaries. After a few years of service in these types of arrangements, the apprentice graduated and was able to practice pharmacy (Sonnedecker, 1976).

Formal university-granting education in the pharmaceutical sciences began in the late 19th century; however, at the time, no state required a pharmacy degree to practice pharmacy. In 1910, the state of New York began requiring a diploma from a recognized pharmacy school, and as a result, several states followed suit (Mrtek, 1976). At that time formal pharmacy education consisted of at least 2 years of university-based education resulting in a PhG degree (Higby, 1996). While most pharmacy schools provided the required 2 years of education, several more offered programs of 3 or even 4 years of length despite no legal or regulatory mandate to do so. A 3-year degree in pharmacy became the standard in 1925, the 4-year degree in 1932, and the 5-year degree in 1960 (Higby, 1996).

Today, a doctor of pharmacy (PharmD) is the minimum requirement for pharmacy licensure in all states. PharmD programs vary in length and structure among the various colleges/schools of pharmacy. While 2 years of preprofessional work is the minimum, some programs require 3 years of preprofessional education while others require a baccalaureate degree. Regardless of the length of the prepharmacy requirement, the final 4 years of education (or its equivalent) must be attained in a college/school of pharmacy (ACPE, 2006). Pharmacy education is a mix of didactic and experiential learning. Students spend the majority of their time in the earliest part of the curriculum in a classroom setting with some experiential learning interspersed. The later part of pharmacy curricula (typically the last year of the PharmD program) involves advanced pharmacy practice experiences exclusively. As of July 2010, there were 115 U.S.-based colleges and schools of pharmacy with accredited (full or candidate status) professional degree programs and an additional five schools with precandidate status (AACP, 2010).

To practice pharmacy in the United States, the District of Columbia, Guam, Puerto Rico or the U.S Virgin Islands, one must possess a pharmacy license. Pharmacy licensure is predicated on the successful completion of the North American Pharmacist Licensure Examination (NAPLEX). In order to sit for this exam, one must have graduated from an accredited college/school of pharmacy, or, in the case of graduates from foreign schools of pharmacy, achieve a suitable score on the Foreign Pharmacy Equivalency Examination (FPGEE) (NABP, 2010). In addition to the NAPLEX, new pharmacists must successfully complete the Multistate Pharmacy Jurisprudence Exam MPJE or a state-level equivalent law examination.

Postgraduate education and training (residencies and fellowships) are available for pharmacists. A pharmacy residency is defined as "an organized, directed, postgraduate training program in a defined area of pharmacy practice" (ASHP, 1987, p. 111) and lasts typically a minimum of 12 months. A fellowship "is a directed, highly individualized, postgraduate program designed to prepare the participant to become an independent researcher (ASHP, 1987, p. 111). While residencies are available in both the 1st and 2nd postgraduate years, a fellowship is usually sought by individuals with master's or doctoral degrees (ACCP, 2004). Additionally, it is desired that fellowship applicants have completed a residency or have equivalent clinical experience (ACCP, 2004; Kane-Gill, Reddy, Gupta, & Bakst, 2008). The match program associated with pharmacy residencies are handled primarily by the American Society of Health-System Pharmacists (ASHP). Postgraduate year 1 (PGY1) residencies are designed to enhance the general competencies of the resident in managing medication use, and as such it supports optimal medication therapy outcomes for patients (ASHP, 2010a). Residencies usually are housed in hospitals; however, the number of PGY1 residencies in other areas of pharmacy practice (e.g., community pharmacies, home care and long-term care facilities, ambulatory care settings, managed care facilities, and others) has increased significantly over the last decade. The number of pharmacists seeking PGY1 residencies has dramatically increased over the past few years (ASHP, 2009b; ASHP, 2010c). Postgraduate year 2 (PGY2) residencies are available for those who have completed a PGY1 residency and are available in ambulatory care, cardiology, critical care, drug information, emergency medicine, geriatrics, infectious diseases, informatics, internal medicine, managed care pharmacy systems, medication safety, nuclear medicine, nutrition support, oncology, pediatrics, pharmacotherapy, health-system pharmacy administration, psychiatry, and solid organ transplant (ASHP, 2010b).

Like medicine, there are varieties of specialties available for pharmacy practitioners; however, pharmacy is unique in that specialization is achieved after one is eligible to practice, not before. In pharmacy, practitioners have the ability to advance their abilities such that they can seek recognition of that training through specialization. The Board of Pharmacy Specialties (BPS) recognizes five areas of pharmacy specialization, which are nuclear pharmacy, pharmacotherapy, nutrition support pharmacy, psychiatric pharmacy, and oncology pharmacy. Beginning in 2011, the Board of Pharmacy Specialties will begin recognizing specialization in ambulatory care pharmacy (Board of Pharmacy Specialties, 2010).

Practice Environment

In spite of many advances in pharmacy practice, pharmacists continue to have the distribution of medications to patients as a primary responsibility. Along with this responsibility over distributive tasks, pharmacists serve as a valuable source of medication-related information for patients and healthcare providers. Pharmacists devote over half (55%) of their time to medication dispensing, 16% to patient care services, 14% to business/organization management, 5% to education, 4% to research, and 5% to other activities (Midwest Pharmacy Workforce Research Consortium, 2010). These proportions vary significantly based on practice setting. Pharmacists in community pharmacies can be expected to spend at least 70% of their time in dispensing-related activities. Hospital pharmacists and those reported to be engaged in other patient care roles can expect to spend less than half their time to medication dispensing. Both community and hospital pharmacists reported spending over one quarter (27%) of their time

on direct patient-care activities on average (Midwest Pharmacy Workforce Research Consortium, 2010).

The number of licensed pharmacists has grown steadily over the last 10 years (**Figure 2-1**). In 2008, there were 269,900 licensed pharmacists in the United States (U.S. BLS, 2010b). Pharmacists are employed in a variety of settings including community-based practice as well as institutional-based practice. The proportion of actively practicing pharmacists working in traditional community pharmacy practice settings (independent, chain, mass merchandiser, and supermarket pharmacies) is largely unchanged (~ 54%) since 2000 (Midwest Pharmacy Workforce Research Consortium, 2010). Over three quarters (76.3%) of working pharmacists are reported to be working full-time (40 + hours per week) with an average of nearly 44 hours per week (43.8 hours) (Midwest Pharmacy Workforce Research Consortium, 2010). The rate of part-time employment among active pharmacists has increased since 2000. The proportion of pharmacists employed part time is almost 29.8% for females and 18.4% for males.

In 1990, just under one third of all practicing pharmacists were women. Currently, women represent almost half (46.4%) of the pharmacy practitioners in the United States. Minorities continue to be underrepresented in the pharmacy workforce. Census estimates in 2008 indicated that 25% of the U.S. population identified with a racial minority group; however, only 18% of pharmacists are reported to be a member of a racial minority group (HRSA Bureau of Health Professions, 2008a). This difference is even more dramatic when one considers Hispanic or Latino population. While the U.S. population is over 15% Hispanic or Latino, only 3.2% of the U.S. pharmacist population is Hispanic or Latino (HRSA, 2008a).

The supply of pharmacists is expected to be adequate to meet the demand for the foreseeable future. Despite an expected increase in demand for pharmaceuticals due in

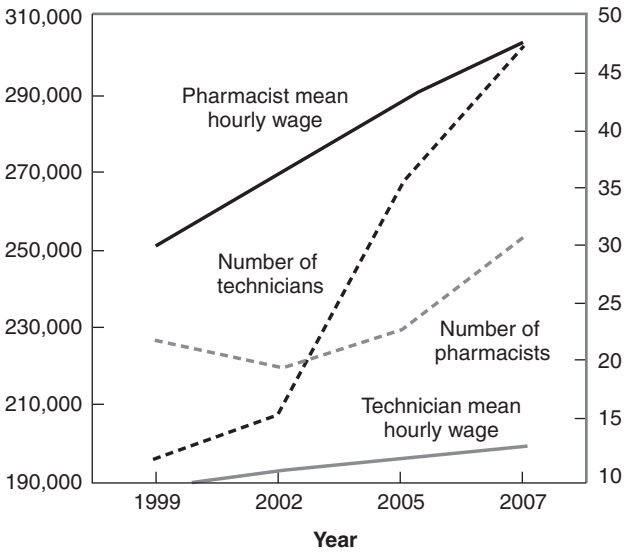

Figure 2-1 Pharmacy Staff and Mean Hourly Wage. *Source*: National Center for Health Statistics. (2010). *Health, United States, 2009: With special feature on medical technology.* Hyattsville, MD: National Center for Health Statistics.

part to growth in the elderly population and increases in science such that new therapies are available, it is expected that the pharmacist supply will be able to keep pace due to new schools of pharmacy and increasing enrollments (HRSA, 2008a).

Pharmacy Technicians

The presence of pharmacy technicians is commonplace in institutional and retail pharmacy settings. In fact, as pharmacy continues its progress toward more involvement in direct patient care, pharmacy technicians will play an important role by freeing the pharmacist from some of his or her distributive tasks in favor of contemporary pharmacy practice roles (ASHP, 2003). The modern-day pharmacy technician in the United States grew out of the efforts of the U.S. Army to develop pharmacy specialists who could assist pharmacists with the preparation and distribution of medications to soldiers (Council on Credentialing in Pharmacy, 2003). The focus on pharmacy technicians increased in the late 1960s partly due to a call by the federal government for the development of a pharmacist aide curriculum in junior colleges and other educational institutions (Council on Credentialing in Pharmacy, 2003). Today, a pharmacy technician is defined as "an individual working in a pharmacy [setting] who, under the supervision of a licensed pharmacist, assists in pharmacy activities that do not require the professional judgment of a pharmacist" (Pharmacy Technician Certification Board, 2010b).

Educational Requirements

State level requirements for pharmacy technicians vary greatly. Some states have established age minimums, as well as educational minimums, such as a high school diploma or its equivalent (U.S. BLS, 2010c), while others have instituted training requirements for pharmacy technicians. Currently, 39 states regulate pharmacy technicians in some manner (certification, licensure, or registration) (Council on Credentialing in Pharmacy, 2009). Of the 50 states, the District of Columbia, Puerto Rico, and Guam, 34 government bodies have established technician training requirements (NABP, 2009a); however, it is generally recognized that there is little uniformity among states regarding pharmacy technician education and training requirements (NABP, 2009c). In addition to initial training and education, some states (17) are requiring pharmacy technicians earn continuing education credits (NABP, 2009a). This requirement varies greatly in number of hours and to whom the requirement applies. For example, one state only requires continuing education credits be earned by its certified technicians. While it may be true that some states do not require technician training, it is not appropriate to conclude that pharmacy technicians in these states do not seek or receive training; it is common that pharmacy technicians receive on-the-job training (U.S. BLS, 2010c).

National certification examinations are available from the Pharmacy Technician Certification Board and the Institute for the Certification of Pharmacy Technicians. Each of these bodies requires that candidates have a high school diploma or equivalent and no felony convictions or previous revocation of state certification or licensure (pharmacy or from another healthcare board). The certification examinations cover a broad range of topics related to aspects of pharmacy technician practice. For example, the Pharmacy Technician Certification Examination covers assisting the pharmacist in serving patients (two thirds of the exam), maintaining medication and inventory control systems (22% of exam), and participating in the administration and management of pharmacy practice (12% of exam) (PTCB, 2010a).

Practice Environment

The number of pharmacy technicians has increased dramatically since 1999 (Figure 2-1). It is estimated that in 2008, there were 326,300 active pharmacy technicians (U.S. BLS, 2010c). Pharmacy technicians work in a variety of settings (e.g., community pharmacies, hospitals, branches of the military, mail order pharmacies); however, most (more than 75%) are employed by retail pharmacies (U.S. BLS, 2010c).

Pharmacy technicians assist pharmacists in the preparation of prescription medications (e.g., computer entry, counting medications, and labeling prescription bottles), assisting customers, and performing administrative duties within the pharmacy (e.g., record keeping, insurance claims, and prescription inventory control). Activities that explicitly would be prohibited include at a minimum, drug regimen review, clinical conflict resolution, prescriber contact concerning prescription drug order clarification or therapy modification, patient counseling, dispensing process validation, prescription transfer, and the receipt of new prescription drug orders (NABP, 2009b).

While there exists a general understanding of the nature and scope of pharmacy technician practice, the specific duties that are able to be performed by pharmacy technicians vary by state and practice setting (e.g., retail versus institutional practice) (NABP, 2009a). Each of the aforementioned duties of the pharmacy technician is performed under the direct supervision of a licensed pharmacist.

Physicians

Physicians have been the professional exemplar in health care. Physicians are concerned primarily with maintaining or restoring the health of their patients through the diagnosis and treatment of disease or injury. For pharmacy, the physician holds an important position. The physician is the healthcare provider who prescribes the most and as such, creates a great deal of demand for pharmacy products and services.

Educational Requirements

Prior to the start of the 20th century, physician education was varied. The earliest medical practitioners in what would become the United States attended informal classes and demonstrations (primarily anatomy) (Flexner, 1910). Formal medical education began in 1765, when it was proposed that a professorship in the theory and practice of medicine be established at the College of Philadelphia (Flexner, 1910). This early education focused on didactic training; however, the realization that medical education required practicum came very quickly. In fact, the earliest formal medical education resembles modern-day medical education, namely a combination of didactic and experiential learning. Over the course of some 150 years, medical education had evolved such that physicians were being trained in one of three ways, an apprenticeship system, a proprietary schools system, or a university system (Beck, 2004). As a result, many of the turn-of-the-20th-century physicians were ill equipped to provide patient care.

A major turning point in medical education in the United States was the publication of the Flexner report. In 1908, at the request of the American Medical Association (AMA), a survey of medical education was undertaken; the result of this effort was the Flexner report. The report served as a major indictment of the so-called proprietary schools. Flexner, like the AMA, believed that these schools operated more for profit than for

education. The report found that these schools had loose admission standards, inadequate faculty, insufficient laboratory experiences, and poor apprenticeship programs. This report made recommendations that included minimum educational standards for admission to medical schools, a minimum length of medical school education of 4 years, and the closure (or combination with universities) of the proprietary medical schools that existed at the time (Flexner, 1910).

As a result, many medical schools closed their doors, and those that remained changed such that they met these new standards. It is interesting to find that many aspects of the present-day American medical profession and its educational processes are a direct result of the publication of the Flexner report. Today, medical education in the United States is a postbaccalaureate program that begins with 2 years of didactic study (M1 & M2) in the sciences (experiential learning is present to a lesser degree in the first 2 years of medical education) in an accredited medical school (preclinical education). During this didactic phase, it is expected that medical students will complete courses in anatomy, biochemistry, genetics, immunology, microbiology, pathology, pharmacology, physiology, and public health sciences (Liaison Committee on Medical Education, 2010). Following their didactic education, medical students (M3 & M4) begin their clerkship training. Clerkship training during these clinical years of education includes required rotations (e.g., internal medicine, surgery, pediatrics, psychiatry, obstetrics and gynecology, family medicine, and neurology) and elective rotations. With few exceptions, these 4 years of medical school are the same for all physicians. In 2010, there were 133 accredited, medical doctorate- (MD-) granting medical schools in the United States (AAMC, 2010).

An alternative educational opportunity for those interested in practicing medicine is the doctor of osteopathic medicine (DO) degree. In the United States, osteopathic medical schools have curricula that are very similar to allopathic (MD-granting) medical schools. Unlike allopathic medical schools, osteopathic medical education emphasizes hands-on diagnosis and treatment through a system of therapy known as osteopathic manipulative medicine (AACOM, 2010b, AACOM, 2010c). Additionally, advocates of osteopathic medicine point to a focus on health promotion and disease prevention in their curricula, although this is also part of allopathic medical education as well. Currently, there are 26 osteopathic medical schools in the United States (AACOM, 2010a).

Regardless of one's type of medical degree, medical licensure in the United States involves a three-step examination process (NBOME, 2010, USMLE, 2010). Medical students and graduates complete the United States Medical Licensing Examination and student and graduates of osteopathic medicine schools complete the Comprehensive Osteopathic Medical Licensing Examination. The step 1 (level 1) examination is taken typically during the second year of medical school. It assesses a student's understanding of and ability to apply scientific concepts to the practice of medicine. Specifically, areas covered on the exam include anatomy, behavioral sciences, biochemistry, microbiology, pathology, pharmacology, and physiology. The Comprehensive Osteopathic Medical Licensing Examination also includes osteopathic principles. Step 2 (level 2) exams are divided into two parts. The first part of the exam assesses clinical knowledge while the second part of the exam assesses clinical skill. The clinical knowledge examination assesses internal medicine, obstetrics and gynecology, pediatrics, preventive medicine, psychiatry, and surgery. The examination also includes emergency medicine, family medicine, and osteopathic principles. Interestingly, the assessment

of clinical skills is accomplished through the use of standardized patients. Because of this fact, sites for the clinical skills exams are limited; there are five for the United States Medical Licensing Examination and one for the Comprehensive Osteopathic Medical Licensing Examination. The step 3 (level 3) exam is taken typically at the end of the first year of residency and is designed to assess a graduate's (resident's) suitability for unsupervised medical practice.

While some states allow medical school graduates to become fully licensed after a 1-year postgraduate internship, most seek a residency. A residency is a stage of graduate medical training that allows the resident to practice medicine for a prescribed period of time under the supervision of fully licensed physicians. Most residencies require 3 years of training (surgery is 5 years) (AMA, 2010a). Residents may enter a residency following the completion of an internship, or the internship might be incorporated into the residency program. Fellowship positions in subspecialties are available for physicians having already completed a residency. Medical students begin the process of deciding their futures during the M4 year. In addition to selecting their preferred sites for residency, medical students are selecting their preference for specialization. The process for selecting medical residencies is similar to that for pharmacy residencies; the student will list his or her preferred sites, and the residency sites will rank their preference for students (along with the number of residents they can house). If the process works as it is intended, students will be placed in residencies where they were a desired candidate. This process is referred to as matching. The National Resident Matching Program handles this process for residencies and fellowships.

Medical specialty certification in the United States is a voluntary process. While medical licensure continues to be the minimum requirement to be a physician in the United States, the licensure examination is not specialty specific. Board certification signifies that a physician possesses expertise in a specialty and/or subspecialty of medical practice. The American Board of Medical Specialties is the umbrella organization of 24 member boards that offer certification in more than 145 specialties and subspecialties (ABMS, 2010). In addition to the American Board of Medical Specialties, the American Board of Physician Specialties oversees 12 medical specialty boards of certification representing 18 medical specialties (ABPS, 2010). The American Osteopathic Association Bureau of Osteopathic Specialists offers certification in any of 18 specialty areas to doctors of osteopathic medicine (AOA, 2010).

Continuing medical education is required by 62 medical boards (AMA, 2010b). The number of hours needed varies by state and in some states varies by degree type (MD vs. DO) with the majority requiring between 20 and 50 hours per year (AMA, 2010b). Additionally, some states require specific continuing medical education content each license cycle (e.g., error prevention, infection control) while some states accept certificates/awards (e.g., those from the American Osteopathic Association and the American Board of Medical Specialties) as documentation of continued competence (AMA, 2010b).

Practice Environment

There has been a steady increase over the years in the number of physicians practicing in the United States (**Figure 2-2**).

Despite this increase, there continue to be fears that the rate of increase has not kept pace with the rate of increase in the U.S. population. Additionally, there are concerns

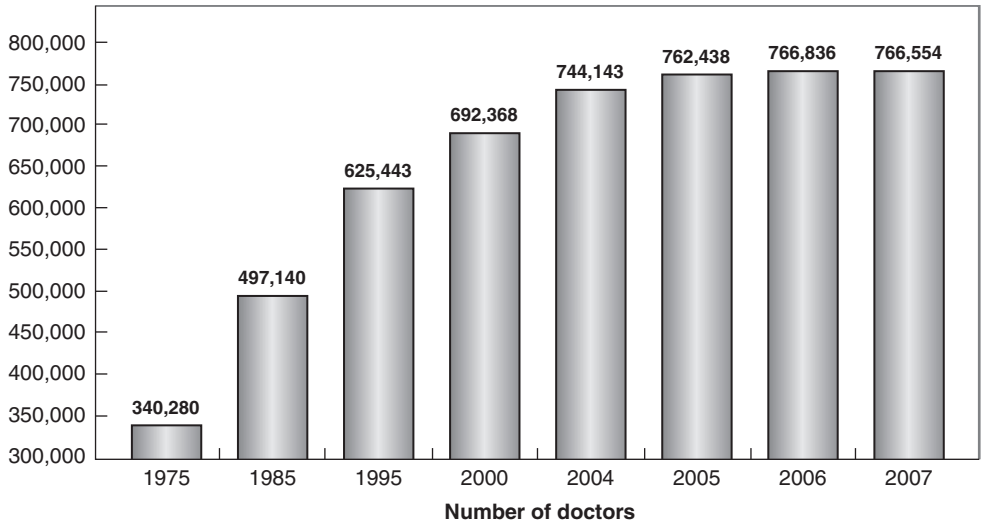

Figure 2-2 Active Doctors of Medicine. *Source*: National Center for Health Statistics. (2010). *Health, United States, 2009: With special feature on medical technology.* Hyattsville, MD: National Center for Health Statistics.

that as baby boomers begin to populate the ranks of the elderly, we may experience an even greater shortage (hyperdemand) of physicians; this increased demand is estimated to be 22% by 2020 over 2005 demand (HRSA, 2008b). This concern applies especially to primary care (**Figure 2-3**). While the number of primary care providers has increased dramatically, the largest increases in primary care providers was seen in

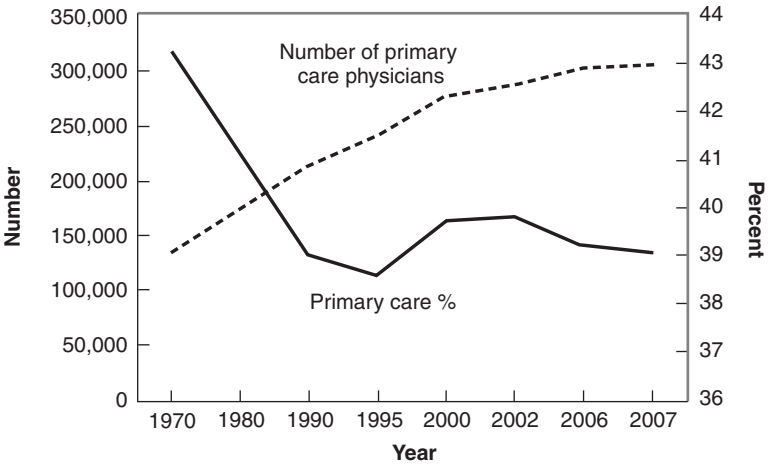

Figure 2-3 Doctors of Medicine in General Primary Care. *Source*: National Center for Health Statistics. (2010). *Health, United States, 2009: With special feature on medical technology.* Hyattsville, MD: National Center for Health Statistics.

nurse practitioners and physician assistants. The increase in the number of physicians in primary care is the result of foreign medical graduates (GAO, 2008). Specialists and subspecialists can and do provide primary care to their patients; however, the trend toward more specialists and less primary care does have implications for the future of the practice of pharmacy. As a result of increased demand for primary care, pharmacists may have an increased role in meeting the needs of patients by fulfilling their responsibilities to provide patient-centered care and, in states where it is allowed, through their expanded responsibilities in collaborative drug therapy management (ASHP, 1999).

Representation of females among the physician ranks continues to increase. In 1990, women represented only 16.9% of the physician workforce; in 2006, women accounted for 27.8% of the total physician population (AMA, 2008). Census estimates in 2006 indicated that just under 25% of the U.S. population identified with a racial minority group; however, just over 20% of physicians are reported to be a member of a racial minority group (AMA, 2008). Of that 20%, 3.5% reported being black, 5.0% Hispanic or Latino, and 12% Asian (AMA, 2008).

Nurses

Nursing represents the largest of all of the healthcare occupations. According to the American Nursing Association, nursing is "the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations" (American Nurses Association, 2010). As this definition would imply, currently, there are many different types of nurses. The two different entry-level types of nurses are the registered nurse (RN) and licensed vocational/practical nurse (LPN). The RN is the more advanced of the two nursing designations owing to the requirements for more education. As a result, the scope of practice for the RN is broader than that for the LPN. Oftentimes, the LPN works under the supervision of a registered nurse. In addition to the LPN and RN, nurses have the opportunities for advanced practice roles. The nurse practitioner, clinical nurse specialist, certified registered nurse anesthetist, and certified nurse midwife are all designations used by advanced practice nurses (APNs). These practitioners have prescriptive authority in most jurisdictions, and in some jurisdictions, APNs may practice independently without physician collaboration or supervision.

Educational Requirements

The educational requirements for the RN and LPN differ in scope and length. Becoming an LPN usually requires 1 year of study resulting in the issue of a diploma or certificate. The requisite education for registered nurses is as diverse as the career opportunities in nursing. There are three recognized educational pathways for those interested in being registered nurses; these are a bachelor's degree, an associate's degree, or a diploma from an approved nursing program. Nurses most commonly enter the occupation by completing an associate degree or bachelor's degree program. Prior to entering practice, graduate nurses must successfully complete the National Council Licensure Examination (NCLEX). The NCLEX is recognized by boards of nursing in all 50 states and U.S. territories. The NCLEX is divided into two separate exams; the NCLEX-RN is for registered nurses and the NCLEX-PN for vocational/practical

nurses. While there are different examinations for registered nurses and for vocational/practical nurses, there is not a separate NCLEX-RN examination or passing standard for associate degree, baccalaureate degree, or diploma nursing school graduates (NCSBN, 2010). Similar to other health professions, nurses have the opportunities to specialize in any of a number of areas of nursing practice. Certification programs are available for RNs in over 20 different areas, such as ambulatory care nursing, general nursing practice, pediatric nursing, and psychiatric and mental health nursing (ANCC, 2010).

Advanced practice nurse (APN) designations require additional education above and beyond that required for licensure as an RN. APNs have at least 2 years of graduate education (e.g., master's degree); however, a new standard for qualification as an APN, that of a doctor of nursing practice, is expected to be in place by 2015 (AACN, 2006). The doctor of nursing practice is an advanced-level practice degree that focuses on the clinical aspects of nursing rather than academic research (contrast PhD in nursing). Currently, there is no indication that the move to the degree will result in an expanded practice role for advanced practice nurses. Advanced practice nurses are licensed through their respective state boards of nursing separate from RNs and LPNs. In addition to being licensed as RNs, APNs are required in some states to submit evidence of advanced education as well as evidence of certification through organizations such as the American Nurses Credentialing Center, the American Academy of Nurse Practitioners, or others (NCSBN, 2009).

The requirements for evidence of continued competence differs across states and across nurse type. Currently, 75% of states and jurisdictions require continuing competence for nurses (NCSBN, 2009). The continued competence requirements include but are not limited to continuing education, minimal practice, peer review, refresher courses, continued competency assessment, and competency examinations. Currently all states require some type of continued competence for APNs. The requirements vary by state and by APN designation but can include recertification, continuing education beyond that required for RN licensure, practice requirements, and pharmacology course work (NCSBN, 2009).

Practice Environment

There were more than 750,000 LPNs in the United Stated in 2008 (U.S. BLS, 2010a). LPNs work nights, weekends, and holidays depending on the setting in which they are employed. LPNs often assist patients with activities of daily living. As such, LPNs are often employed by nursing homes, home health care, and hospice, as well as office-based practices of physicians and hospitals. The roles that LPNs can fulfill vary by state. In 2008, there were estimated to be over 3 million licensed registered nurses in the United States (HRSA Bureau of Health Professions, 2010; U.S. BLS, 2010e). The percentage of RNs whose initial nursing education was an associate's degree was 45.4, that of a baccalaureate degree was 34.2, and a diploma in nursing, 20.4. Nurses with advanced degrees comprised 13.2% of all licensed RNs (HRSA, 2010). The majority of nurses (62.2%) work in the hospital setting (HRSA, 2010). Other notable employment opportunities for registered nurses exist within ambulatory care (10.5%) and public health (7.8%). Currently, minorities are underrepresented in the nursing population. Approximately 17% of registered nurses are reported to be a member of a minority group. While Asians are slightly overrepresented, blacks, Hispanics, and American Indians/Alaska Natives are underrepresented in comparison to population statistics.

Nursing continues to be a female-dominated profession, with only 6% of RNs reported to be male. APNs work in a variety of healthcare settings. The level of practice independence and prescriptive authority differs by state (independent practice, collaborative agreements/protocols, or practice under physician supervision) and APN designation (e.g., nurse practitioner, clinical nurse specialist, certified nurse midwife, and certified nurse anesthetist) (NCSBN, 2009).

Physician Assistants

Physician assistants' (PA) role in the health system is unique in that these providers practice medicine in a team environment under the direction of a physician. As part of their comprehensive responsibilities, PAs conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventive health care, assist in surgery, and prescribe medications (AAPA, 2010a). However, the specific duties of physician assistants are determined by the supervising physician and by state law (U.S. BLS, 2010d).

Educational Requirements

Physician assistant programs began in the 1960s as an effort to address the need for assistants for physicians who would work only with physician supervision. The first program devoted to the education of physician assistants was located at the Duke University School of Medicine (Jones, 2007). As other programs have developed, each has adhered to the basic tenets that a PA would not have independent authority and the curriculum would be competency based (Jones, 2007). Today, physician assistants are educated in programs that are accredited by the Accreditation Review Commission on Education for the Physician Assistant. These programs are housed in community colleges as well as 4-year colleges and universities (Jones, 2007). Regardless of its location, the PA curriculum averages 26 months. Physician assistants are trained to diagnose and treat medical problems. As such, the PA curriculum consists of didactic instruction in the basic medical and behavioral sciences as well as experiential learning. Clinical rotations are used in the later portions of PA education. Currently, there are 149 accredited physician assistant programs in the United States (AAPA, 2010b). Like many other healthcare workers, PAs are required to complete continuing medical education (100 hours every 2 years). Additionally, PAs are retested on their clinical skills on a regular basis (every 6 years) (NCCPA, 2010).

Practice Environment

In 2008, there were almost 75,000 PAs in the United States (U.S. BLS, 2010d). The greatest percentage of PAs report being employed in a group medical practice (44.2%). Almost one quarter of all clinically practicing PAs are employed in hospitals, and 11.6% in solo physician practices. The majority of PAs (65%) are female and a predominant percentage (88.9%) are white. Minorities are underrepresented among the ranks of physician assistants with 3.9% Asian, 2.9% black, 3.6% Hispanic/Latino, and 0.6% American Indian/Alaska Native.

Other Allied Health Professionals

Table 2-1 provides a list of additional healthcare professionals pharmacists may interact with in their patient care activities.

Table 2-1 Other Allied Health Professionals

Occupation	Education	Degree(s)	Roles
Optometrists	7–9 yrs	OD	Optometrists are the primary providers of vision care. They examine eyes to diagnose vision problems, and prescribe eyeglasses and contact lenses. They diagnose diseases of the eye (e.g., glaucoma) and may have limited prescriptive authority.
Social workers	4–6 yrs	BSW, MSW	Social workers assist people by helping them cope with and solve issues in their everyday lives, such as family and personal problems and dealing with relationships. Some social workers help clients who face a disability, life-threatening disease, or a social problem, such as inadequate housing, unemployment, or substance abuse. Social workers also assist families that have serious domestic conflicts, sometimes involving child or spousal abuse.
Podiatrists	9 yrs	DPM	Podiatrists diagnose and treat disorders, diseases, and injuries of the foot and lower leg. They may prescribe medications, perform physical therapy, fit orthotics, set fractures, and perform surgery.
Dentists	6–10 yrs	DDS, DMD	Dentists diagnose and treat problems with teeth and tissues in the mouth. They may prescribe medications, perform surgery, and extract teeth.
Psychologists	6+ yrs	Specialist, MS, PhD, PsyD	Psychologists assess, diagnose, treat, and prevent mental disorders. They advise people on how to deal with problems of everyday living, including problems in the home, place of work, or community, to help improve their quality of life.
Dieticians/ nutritionists	4 yrs	BS, MS	Dietitians and nutritionists plan food and nutrition programs, supervise meal preparation, and oversee the serving of meals. Illness prevention activities occur by promoting healthy eating habits and recommending dietary modifications.
Occupational therapists	4–6 yrs	MS	Occupational therapists help patients improve their ability to perform tasks in living and working environments. They work with individuals who suffer from a mentally, physically, developmentally, or emotionally disabling condition. The goal is to help clients have independent, productive, and satisfying lives.

(continues)

Table 2-1 Other Allied Health Professionals *(continued)*

Occupation	Education	Degree(s)	Roles
Recreational therapists	4 years	BS	Recreational therapists provide activities (arts and crafts, interaction with animals, sports, games, dance and movement, drama, music, and community outings) for individuals with disabilities or illnesses to improve and maintain their physical, mental, and emotional well-being.
Physical therapists	4+ yrs	MS, DPT	Physical therapists work with patients who have limitations in their ability to move and perform functional activities. They examine patients and develop a plan using treatment techniques designed to promote the ability to move, reduce pain, restore function, and prevent disability.

Source: Data from U.S. Bureau of Labor Statistics. (2010). *Occupational Outlook Handbook* (2010–2011 ed.). Retrieved from http://www.bls.gov/oco/

COLLABORATION WITH HEALTHCARE PROVIDERS

The primary role of the pharmacist is largely focused around medication consumption (e.g., to screen for contraindications and drug–drug interactions, to serve as the physician's resource for information about medical therapies, and to provide patient education about medications) (Peterson, Albert, Amin, Patterson, & Fonarow, 2008). For high-risk disease states, pharmacists can play an ever more important role as a part of the medication management team. For example, the inclusion of a pharmacist on the multidisciplinary cardiovascular team was found to decrease medication-related errors dramatically. One research study demonstrated that when a pharmacist rounded with the intensive care unit team, there was a 66% decrease in the rate of preventable adverse drug events (Leape et al., 1999). The role of a pharmacist on a team was further cemented when LaPointe and Jollis (2003) found that over a 5-year period, a clinical pharmacist on the cardiology ward identified and corrected a significant number of medication errors (24 errors per 100 admissions). This same study also found the most common point of error occurred in the transition from the outpatient to the inpatient setting, underlining the importance for continuity of care and communication between practitioners within different organizations. Furthermore, pharmacy-led interventions have been shown to improve medication compliance in hospitalized, heart failure and postmyocardial infarction patients (Bouvy et al., 2003). Reductions in all-cause hospitalizations and medical costs as well as improved survival rates have been observed when a multidisciplinary team is engaged in patient care (Peterson, Albert, Amin, Patterson, & Fonarow, 2008).

In today's healthcare environment, there exists a call to increase both the safety and quality of services provided; this call expressly includes medication therapy. The complexity of the healthcare system makes it very difficult for one provider to be all things to all patients; in fact, many of the discussions surrounding patient safety and healthcare quality specifically mention the use of teams of healthcare providers (IOM, 1990).

In order for a pharmacist to effectively participate as a team member, he or she needs to have a fundamental understanding of his or her healthcare colleagues as well as the nuances of collaborating with other healthcare providers.

Interdisciplinary Care Versus Multidisciplinary Care

The various healthcare professionals bring much expertise to the service of the patient. However, an important distinction must be made between the types of relationships that may exist between the different healthcare providers, such as between multidisciplinary care and interdisciplinary care. *Multidisciplinary care* refers to many different professionals working for the good of the patient, albeit somewhat independently. The typical model of health care in the United States is replete with examples of multidisciplinary care. For example, a patient visiting a physician's office for an illness will likely interact with a nurse who may collect information about the patient's condition, a physician who may diagnose disease and prescribe a treatment, and after a trip to the pharmacy, a pharmacist who will dispense the medication and educate the patient on its appropriate use. While this model of care is generally recognized to lead to an improvement in outcomes, it does not take full advantage of the talents of the healthcare system. It is, at worst, a sum of the inputs from the various healthcare professionals. *Interdisciplinary care* means that the many different professionals working together for the patient's good also communicate effectively among themselves and with the patient. Teams with greater cohesiveness are associated with better clinical outcome measures and higher patient satisfaction (Grumbach & Bodenheimer, 2004).

While the importance of collaboration should not be underestimated, neither should the challenges that one faces when trying to establish collaborative relationships. Common barriers to the establishment of collaborative working relationships include boundary concerns, poor communication, power concerns, lack of trust of the other party, and poor proximity. The collaborative working relationship model (McDonough & Doucette, 2001) describes the process by which pharmacists can establish effective and productive working relationships (**Figure 2-4**). This stage model posits that pharmacists' and physicians' relationships mature as the trust, shared decision making, and interdependence between the two providers develops.

Stage 0, *professional awareness,* would best be described as the traditional pharmacist–physician working relationship. At this stage, exchanges between the pharmacist and physician are discrete and minimal. For example, a stage 0 relationship would be characterized by the pharmacist seeking refill authorization, alerting the physician to a potential or actual drug-related problem (e.g., drug–drug interaction), or discussing some other pharmacotherapy-related issue that revealed itself during dispensing. According to the model, these interactions are short in duration with no attempt to change the existing relationship. Moreover, stage 0 interactions "are considered professionally safe, routine, and defined by well-established expectations" (Brock & Doucette, 2004, p. 359).

Stage 1, *professional recognition,* involves exclusively the pharmacist's effort to establish a relationship with the physician. In stage 1, the pharmacist informs the physician of the services that the pharmacist can provide. This is an important step in the establishment of the collaborative relationship because the pharmacist's role definitions and role boundaries have been established by past experiences that the physician has had with pharmacists, including the one attempting to establish a collaborative working relationship (stage 0). The goal of this state in the model would be trust. Pharma-

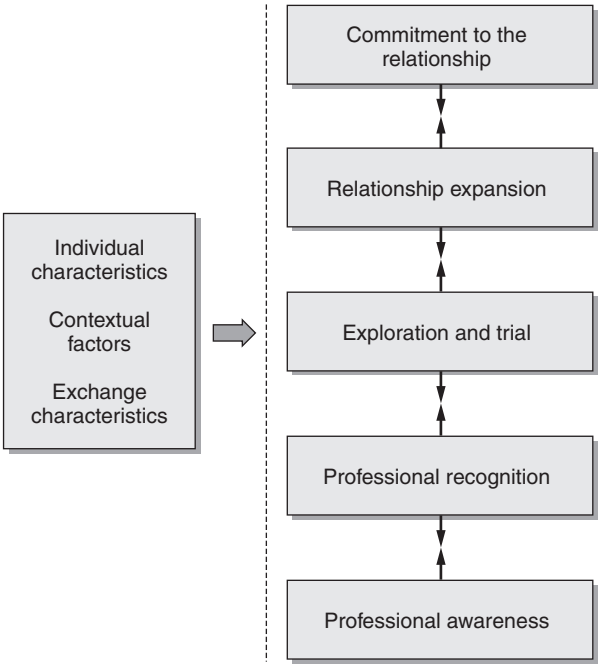

Figure 2-4 Model of Pharmacist Collaborative Working Relationships. *Source*: Brock, K. A., & Doucette, W. R. (2004). Collaborative working relationships between pharmacists and physicians: An exploratory study. *Journal of the American Pharmaceutical Association, 44*(3), 358–365.

cists are working to enhance their own attractiveness or usefulness to the physician during stage 1 interactions (Brock & Doucette, 2004).

Stage 2, *exploration and trial,* requires some low level of commitment on the part of the physician above and beyond what has been demonstrated in the first two stages; however, the pharmacist remains the primary initiator of interaction. The trial may involve the physician referring a patient or a few patients so that he or she can assess the pharmacist's ability to deliver both the quantity of services as well as the quality of the services as promised and the risks and benefits associated with being involved in the collaborative relationship.

Stage 3, *professional relationship expansion,* is the natural progression of activities undertaken in stages 1 and 2. In stage 3, the pharmacist can expect that the physician initiates the exchange; however the pharmacist can expect that the exchange efforts remain unbalanced (the pharmacist still has more responsibility as an initiator). The content of pharmacist-initiated communication continues to center on the benefits derived from the pharmacist's services as well as seeking feedback on past performance. This give-and-take exchange represents some level of commitment on the part of the physician toward the collaborative relationship; however, the pharmacist can and should expect that professional conflict will occur in this fine-tuning of the relationship.

Stage 4, *commitment to a collaborative working relationship,* is achieved when the physician is convinced that the benefits of the collaborative relationship outweigh any risks. For commitment in a relationship to exist, at the very least, the relationship needs to be relatively lengthy, consistent, and should involve a high level of input

from all parties (Brock & Doucette, 2004). Commitment is most likely to be reached if there is equity in effort toward maintaining the relationship. Additionally, once commitment is achieved, work remains to be done. Failure to attend to the relationship by both parties may lead to its demise. In other words, a collaborative working relationship is a relationship in every sense of the word. Unlike earlier stages of the model, the pharmacist cannot be the sole source of relationship effort; the physician must also attend to the relationship's needs.

The success of efforts or the rapidity with which relationships are established will depend on the individuals involved. Factors found to positively influence the development of the pharmacist–physician collaboration were trustworthiness, role specification, relationship initiation, and professional interactions (Doucette, Nevins, & McDonough, 2005; Zillich, McDonough, Carter, & Doucette, 2004). As such, pharmacists must provide services that are valued by the physician and deliver on all promises made. Moreover, both parties must recognize the complementary roles of the pharmacist and physician that may result in interdependence. Lastly, frequent and meaningful interactions are important to sustain the collaborative working relationship. If the pharmacist is out of sight (or out of touch), he or she is out of mind, and there is no collaboration.

Continuity of Care

Consistent with the ideals of interdisciplinary care and collaborative work relationships is continuity of care. The days are long gone when one doctor, with the help of a nurse, provided all the health care a person needed. Now, it is not uncommon for patients to see several healthcare practitioners. They may receive care from doctors, nurses, nurse practitioners, physician assistants, pharmacists, dietitians, physical or occupational therapists, social workers, and nurse's aides. They may have several doctors, each specializing in one organ system or disease. To complicate matters, as people age they are also likely to move from one place of care to another. They may receive care in a doctor's office, hospital, rehabilitation facility, board-and-care facility, an assisted living facility, nursing home, or at home. At the end of life, they may receive hospice care. Ideally, all people involved in a person's health care, including the person receiving care, communicate and work with each other to coordinate the health care. Additionally, all interested parties (at least patient and providers) should agree on and understand the goals for health care. Then, changes in practitioners and places of care could occur smoothly, lessening the impact of care disruption. Two core concepts or aspirations of continuity are revealed by the preceding definitions. First, continuity is about the care of a single patient. As such, continuity is *not* an attribute of providers or organizations (Haggerty et al., 2003). The second element is that care is provided over time. When taken together these core elements represent a continuous care relationship, a laudable goal in health care.

Whether continuity of care represents a process or outcome remains unsettled (Christakis, 2003). Perhaps it is both, a means to an end and an end itself that can then be used similar to other intermediate outcomes in determining quality of care. However, regardless of the type of study, three types of continuity are recognized: (1) informational continuity, (2) management continuity, and (3) relational continuity. Informational continuity is considered by some to be the *sine qua non* in continuity of care; "it is the common thread linking care from one provider to another and from one healthcare event to another" (Haggerty et al., 2003, p. 1220). Information tends to center on the medical condition (disease focused), but also can include information about the

patient's values and preferences (patient focused). It is believed that the importance of patient preferences increases across separate care events.

Management continuity is the consistent and coherent approach to the management of a health condition that is responsive to a patient's changing needs (Haggerty et al., 2003). In other words, it is the need for an established plan of care that meets the needs of the patient. This is believed to be particularly important in instances when a patient's case is complex or the patient suffers from chronic disease (Haggerty et al., 2003). Management continuity is achieved when care is provided in a complementary and timely manner. The use of protocols and shared management plans are evidence of management continuity of care and provide comfort to both provider and patient (Haggerty et al., 2003).

Relational continuity is also referred to as interpersonal continuity. Relational continuity represents an ongoing therapeutic relationship between a patient and one or more providers. This personal relationship between the patient and clinician is characterized by personal trust and responsibility (Saultz, 2003). As one can imagine, interpersonal continuity is believed to foster improved communication, trust, and a sustained sense of responsibility, and is associated with higher levels of satisfaction with care (Saultz & Albedaiwi, 2004). It is important to understand that strong interpersonal continuity of care is associated with improved use of preventative services, reduced hospitalizations, and lower costs of care (Saultz & Lochner, 2005).

THE MEDICAL HOME

One of the models of care currently receiving the focus of policy makers and practitioners is the medical home. Reflecting the concepts of interdisciplinary care, collaborative work relationships, and continuity of care, the medical home refers to a partnership approach in the provision of primary health care that is accessible, family centered, coordinated, comprehensive, continuous, compassionate, and culturally effective (Sia, Tonniges, Osterhus, & Taba, 2004). A medical home is patient-centered primary health care implemented to improve the patient's health across a continuum of referrals and services (Sia, Tonniges, Osterhus, & Taba, 2004). It is based on a relationship between the patient and physician, formed to improve the patient's health via open communication within a team care framework. The primary focus is to have one central clearinghouse in which all patient medication records are kept up to date, embracing the idea for shared information among healthcare professionals and thus facilitating continuity of care.

Whereas the term was used originally to describe a place—a single source of all medical information about a patient—and introduced in 1967 by the American Academy of Pediatrics, it is now a concept adopted by the numerous medical associations because it is associated with improved quality, reduced errors, and increased satisfaction (Rosenthal, 2008). Medical homes have been linked with better health, lower overall costs of care, and reductions in disparities in health. Primary care organizations, including the American Board of Family Medicine, have promoted the concept as an answer to government agencies seeking political solutions for making quality health care affordable and accessible to all Americans (Sia, Tonniges, Osterhus, & Taba, 2004).

Pharmacists can have a role in the patient-centered medical home model because it is another model requiring a team-based approach to patient care. While most

conceptualizations of the medical home recognize the physician only as the primary healthcare provider, it is evident that this initiative requires a multidisciplinary approach from the entire healthcare team, including nurses, pharmacists, physicians, therapists, and other health professionals. Pharmacists should and can have a role in medication therapy management in the medical home model, as well as open shared communication with physicians. Pharmacists have been typically underused in this role, yet have great potential to demonstrate professional expertise in this model of care.

Demonstration projects have documented the value of having pharmacists as care team members by their involvement in clinical decision making, such as medication evaluations to assess medication-related problems or the failure to achieve desirable outcomes (Smith et al., 2010). Pharmacists can play important roles in optimizing therapeutic outcomes and promoting safe, cost-effective medication use for patients in medical homes, especially patients with chronic conditions (Smith et al., 2010). Barriers to medical home implementation are similar to any other model that requires change in behavior. This involves developing relationships with other professionals who are willing to work collaboratively, communicating expectations with team members, finding a patient population interested in utilizing a medical home concept, and changing reimbursement and payment policies such that it will incentivize providers to adopt a change in practice.

While the healthcare practitioners who affect the role of the pharmacist will be varied, one consistency remains the responsibility to evaluate the manner in which care is delivered and to change what is necessary to provide improved outcomes for patients. The impetus for team-based approaches to care has often been less than desired/expected outcomes associated with care. As such, it is important to understand the concept of quality in health care and the measures that interested parties use to identify quality.

DEFINING QUALITY

Quality means different things to different people and can be based on involvement, need, price, and experience. In other words, quality may mean the availability of appointment times in a physician's office; to others, it means how friendly and accommodating the staff at the organization is to the patient. Quality also may be evaluated on the basis of the diagnosis or the medication providing a cure for the patient. The Institute of Medicine (IOM) has defined *quality* as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (IOM, 1990, p. 21). Another prominent definition of quality has been offered by the Agency for Healthcare Research and Quality (AHRQ), who has defined quality as "doing the right thing for the right patient, at the right time, in the right way, to achieve the best possible results" (AHRQ, 2005, p. 3).

While both definitions provide a clear picture of good quality health care, based on scientific and medical evidence, the so-called quality movement has attempted to take the specific details of a patient's life into consideration in order to improve the health and life of the patient being treated. As such, there are believed to be six components of healthcare quality (**Table 2-2**). Each of these components of quality can be influ-

Table 2-2 Components of Healthcare Quality

Effective	Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit.
Safe	Avoiding injuries to patients from the care that is intended to help them.
Timely	Reducing wait times and harmful delays for both those who receive and those who give care.
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.
Equitable	Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.
Efficient	Avoiding waste, including waste of equipment, supplies, ideas, and energy.

Source: Agency for Healthcare Research and Quality (AHRQ). (2009, March). *2008 National healthcare quality & disparities reports* (AHRQ Publication No. 09-0001). Available at www.ahrq.gov/qual/qrdr08.htm

enced by every member of the healthcare team. As a result, organizations and professionals should focus their efforts to provide care that meets all of these standards in an interdisciplinary effort to achieve desired health outcomes. Unfortunately, the current state of the healthcare system frequently results in one or more of these components being unmet, so patients often struggle with inadequate quality in health care.

The six components of healthcare quality suggest the need for an interdisciplinary approach to care because it would be quite challenging for any one healthcare provider to satisfy all these quality elements for every patient under his or her care.

How Is Quality Assessed?

Although it is understood generally what quality is, how quality in health care is assessed is much less understood by healthcare providers, including pharmacists. The measures used to assess healthcare quality are used to benchmark performance. Health care quality may be measured in any of a number of ways including: (1) clinical performance measures of how well providers deliver specific services needed by specific patients (e.g., children receiving recommended immunizations); (2) assessments by patients of how well providers meet healthcare needs from the patient's perspective (e.g., do providers communicate clearly?); and (3) outcome measures (e.g., mortality rates from cancers preventable by screening) that may be affected by the quality of health care received. (AHRQ, 2009; AHRQ, 2010).

Clinical performance measures are those that are most valued from the clinician's perspective, as it is those measures that most directly influence the clinical outcomes of the patient (Kozma, Reeder, & Schultz, 1993). An example of a clinical performance measure is following standard procedures after the patient is admitted to the hospital for an acute myocardial infarction (e.g., administration of an aspirin within 24 hours of arrival). The patient's assessment of care, probably the most important to the patient as it relates to how he or she perceives his or her treatment to be, is often measured with patient report cards and quality. Lastly, the outcomes quality measures are of particular interest to researchers, policy makers, and administrators because these measures

can be used to objectively review trends over time or typically take a macro perspective of how the end result was affected by some type of intervention or objectively reviewed trends over time. Varying aspects of the healthcare delivery are valuable for different reasons to different parties, depending on their perspective and the role in which they play in the patient care process. There is an abundance of quality information available and is reported in one of three ways: accreditation, report cards, and consumer ratings.

Accreditation

Healthcare organizations seek accreditation from a variety of agencies. Accreditation is the process by which certification of competency, authority, or credibility is presented to an organization. This information is used by the Centers for Medicare and Medicaid Services (CMS), third-party administrators, employers, and consumers as one component of value assessment. Medicare payments to hospitals and other facilities are contingent, among other things, on the facility meeting standards set by the Joint Commission. The Joint Commission was formed in 1952 (and was then called the Joint Commission on the Accreditation of Healthcare Organizations) under the aegis of the American Hospital Association and the American Medical Association. It not only serves as the standard accrediting body for hospitals, long-term care facilities, and other organizations, but it also participates in developing performance standards for healthcare organizations.

Much like the Good Housekeeping seal for consumer products, these performance measures serve as an indicator of quality to those unfamiliar with the healthcare organization. Possessing accreditation means that the healthcare organization has met national standards, including clinical performance measures. The Joint Commission presides over a growing, national, comparative performance measurement database that can inform its members of internal healthcare organization quality improvement activities, external accountability, pay-for-performance programs, and advance research.

Report Cards

While accreditation status is an important quality indicator, there are other quality initiatives in which organizations participate. One such effort involves the development of quality indicators and measures and providing audiences with report cards of the assessment of the organization, healthcare plan, or healthcare provider. These summary reports of key indicators are used by a variety of audiences including but not limited to consumers and employers. The National Committee for Quality Assurance (NCQA) is an entity that produces report cards for physicians and health care plans. The mission of the NCQA is "to provide information that enables purchasers and consumers of managed care to distinguish among plans based on quality" (NCQA, 2010).

Managed care organizations may seek NCQA accreditation by sharing with patients and potential clients the report cards indicating that they meet agreed-upon standards of quality. Although accreditation is voluntary, plans usually promote themselves on the basis of their grades. For example, the NCQA has developed and provides a set of measures, called the Health Care Effectiveness Data and Information Set (HEDIS), which is used by more than 90% of America's health plans to measure performance on important dimensions of care and service. **Table 2-3** contains a list of organizations

Table 2-3 Organizations Providing Quality Information

Organization type	Example of quality initiative
Managed care organizations	National Committee for Quality Assurance (NCQA)
Medicare	Medicare Health Outcomes Survey (HOS)
Inpatient setting	Joint Commission
	Hospital Quality Alliance
	Nursing Home Compare
Outpatient setting	Accreditation Association for Ambulatory Health Care
Physicians	Ambulatory Care Quality Alliance (AQA)
	National Committee for Quality Assurance (NCQA)
Pharmacies	Pharmacy Quality Alliance (PQA)

that offer some type of accreditation and/or provide quality measures specific to the type of organization.

Patient Ratings

Not only do organizations evaluate themselves using the measures that indicate quality care, but patients also evaluate these organizations. Many quality initiatives have developed surveys for patients to complete in order to rate these organizations. Many of these surveys are available on paper or on the Internet; patients rate their experience with a provider or healthcare organization. This aggregate information is subsequently published for others to see and use in evaluating potential providers and organizations. Although patient participation in this type of evaluation is not widespread, organizations continue to work to increase awareness of the patient information in the quality initiative. These websites allow for comparisons between different organizations on certain dimensions of quality of care, such as those discussed earlier. It is believed that patients will use these resources when making choices about providers or to report on their experiences with a provider. It is expected that these resources would be used as a resource for decision making much like a consumer would use product reviews on websites to evaluate product quality. Patients candidly sharing quality information about provider services are supplemented by payers finding ways to compensate these providers for good, cost-efficient care. **Table 2-4** contains a sample of organizations that collect information by patients for patient use.

The manner in which these organizations collect this type of information is through surveys, primarily. These surveys allow patients to rate their provider's performance, or the organization may examine protocols within the practice organization to determine if they meet the benchmarked standards of each item of interest. For example, the consumer assessment of healthcare providers and systems (CAHPS) program presents survey items for ambulatory-level care and facility-level care, including items related to provider communication such as "doctor respected patient's comments" and "doctor spent enough time with patient." Patients respond to the survey items and item responses are aggregated and presented in summary in the form of reports. Similarly, the Pharmacy Quality Alliance (PQA) developed measures to assess the pharmacy, the pharmacist, and the pharmacy staff (**Table 2-5**).

Table 2-4 Sample Quality Organizations Collecting Information for Patients

Organization name	Website	Description
Agency for Healthcare Research and Quality's: Consumer Assessment of Healthcare Providers and Systems	https://www.cahps.ahrq.gov	Develop standardized surveys of patients' experiences with ambulatory and facility-level care
CMS's Hospital Compare	www.hospitalcompare.hhs.gov/	Allows patients to search for information on quality care at hospitals.
CMS's Nursing Home Compare	www.medicare.gov/nhcompare	Allows consumers to search for information on quality care for Medicare and Medicaid-certified nursing homes.
Joint Commission's Quality Check	www.qualitycheck.org	Allows patients to search for accredited hospitals and other healthcare facilities.
National Committee for Quality Assurance report cards for choosing quality health care	http://www.ncqa.org	Provides information on report cards for health plans and physician groups.
U.S. News & World Report	www.usnews.com	Publishes annual rankings of America's best health plans and best hospitals.
Agency for Healthcare Research and Quality 2009 State Snapshots	http://statesnapshots.ahrq.gov	Provides state-level information from the National Healthcare Quality Report.

Table 2-5 Sample Quality Measures From Pharmacy Quality Alliance Consumer Experience Survey

In the last 12 months, if you wanted to talk to the staff at this pharmacy about your health or medicine, how often were you able to talk to staff as soon as you wanted to?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always
- ☐ I did not want to talk to staff at this pharmacy about my health or medicine in the last 12 months

In the last 12 months, how often did the staff at this pharmacy show concern for you?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

IMPORTANT TRENDS AFFECTING HEALTHCARE PROFESSIONALS

Healthcare quality is a major area of focus currently within the healthcare system and requires the insight and initiative of all practitioners involved. There are five related areas that continue to receive attention and will affect the various healthcare professionals as this quality paradigm becomes the standard of practice. These areas are patient-focused care, critical pathways, continuous quality improvement (CQI), pay for performance, and technological advances.

Patient-Focused Care

Patient-focused care in a healthcare facility is

> characterized by decentralization of services, cross-training of personnel from different departments to provide basic care, interdisciplinary collaboration, various degrees of organizational restructuring, simplification and redesign of work to eliminate steps and save time, and an increased involvement of patients in their own care. (Vogel, 1993, p. 2321)

In patient-focused care, objectives include (1) improving patients' perceptions of the quality of care and staff members' job satisfaction and (2) using nonclinical and clinical staff more effectively and efficiently (Vogel, 1993).

Patient-focused care attempts to improve patient care by organizationally and physically moving selected service functions, such as basic laboratory, pharmacy, admitting/discharge, medical records, housekeeping, and material support services to patient care areas, thus effecting an organizational restructuring (Wakefield et al., 1994). In providing such care, health professionals work in teams to increase and improve communication among themselves and with the patient. In an institutional setting, it would appear that this type of care could be facilitated by organizational changes; however, in the ambulatory setting, the shift to patient-focused care will require extraordinary effort on the part of individual practitioners to collaborate with other professionals.

However, the overall theme remains the same in any setting: improving patient care and, as a result, improving outcomes requires a partnership between pharmacy professionals, doctors, patients, and payers.

Patient-focused care is a systematic and comprehensive team approach composed of multiskilled or cross-trained individuals capable of providing more of the services directly to patients. Pharmacists can be and should be key members of a multidisciplinary team who have the opportunity to assume shared responsibility for drug therapy management and patient outcomes. Pharmacists are now being trained as clinical pharmacotherapy specialists and have extensive medication-related knowledge to contribute to a team-based approach to care.

Meeting quality standards requires a culture of quality. In order to ensure quality care, a redesign of the system to support a team approach is required. Quality improvement organizations such as NCQA have developed tools and resources to assist in creating an interdisciplinary work environment in order to influence optimally patient outcomes. One of these tools, Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) is a comprehensive set of ready-to-use materials and a training curriculum to integrate teamwork principles into any healthcare system. The Department of Defense, in collaboration with the Agency for Healthcare Research and Quality (AHRQ), developed TeamSTEPPS and has built a national training and support network called the National Implementation of TeamSTEPPS Project. This network is currently conducting training sessions throughout the country (AHRQ, 2010).

Facilitating patient-focused care requires reengineering of healthcare systems. Hammer and Champy (1993) defined reengineering as:

> The fundamental re-thinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as quality, cost, service and speed. (pp. 31–32.)

The purpose of reengineering is to achieve improved efficiencies and quality. Reengineering seeks to combine multiple jobs into one, empower workers and make them more accountable, sequence the elements of work more naturally, create greater flexibility, and blur or move organizational boundaries (Al-Shaqha & Zairi, 2000). The goals of reengineering can be met by increasing efficiency, decreasing redundancy, and eliminating waste. Extensive redesign of the basic work processes as proposed by patient-focused care advocates may result in significant changes in employee job scope, task responsibilities, professional autonomy, and reporting relationships. From the employee's perspective, such changes may be neither warranted nor welcomed. Therefore, obtaining employee buy-in and establishing appropriate incentive structures to facilitate desired changes is critical in implementing patient-focused care (Wakefield et al., 1994).

Critical Pathways

One of the ways in which to implement reengineering in pharmacy is to use the critical pathway process as a guide to reengineering procedures related specifically to the management of a patient's care. Critical pathways represent comprehensive management plans that aim to optimize and streamline patient care (Kirk, Michael, Markowsky, Restino, & Zarowitz, 1996). Critical pathways have been referred to in the medical literature by a number of different terms, including care path, care map,

clinical pathway, critical path of care, case management plan, multidisciplinary action plan, collaborative care track, plan of care, clinical care plan, and care guide (Lumsdon & Hagland, 1993). These plans define key steps in the management of the patient not only to improve the quality of health care, but also to reduce resource utilization (Shane, 1995). A critical pathway is an "optimal sequencing and timing of interventions by health care professionals for a particular diagnosis or procedure, designed to minimize delays and resource utilization and maximize the quality of care" (Coffey et al., 1992, p.45).

Some of the specific goals of critical pathways include providing continuous quality improvement, decreasing service fragmentation (increasing continuity of care), optimizing cost-effectiveness of healthcare delivery, guiding the patient and family through expected treatment and progress, and increasing satisfaction of patients, families, staff, physicians, and third-party payers (Shane, 1995). Critical pathways create targeted patient outcomes and quality end points, which form a foundation for common expectations, shared responsibility, regular communication, and early problem detection and intervention among all members of the healthcare team (Coffey et al., 1992). Further, they identify specific time frames and desired outcomes associated with each care step, with the goals of minimizing delays and maximizing resource utilization (Shane, 1995). Implementation of critical pathways has reduced the use of institutional resources in caring for patients with pneumonia (Marrie et al., 2000) and has improved patient outcomes by providing a mechanism to coordinate care and to reduce fragmentation and ultimately cost (Panella, Marchisio, & Di Stanislao, 2003).

Although critical pathways are relatively new to health care, project managers in the construction and engineering fields have used them for many years. As in these other fields, critical pathways in health care are developed usually for high-volume, high-risk, or high-cost procedures. Because of increasing competition within health care, "managers have embraced critical pathways as a method to reduce variation in care, decrease resource utilization, and potentially improve healthcare quality" (Every, Hochman, Becker, Kopecky, & Cannon, 2000, p. 461). Critical pathways require organizational change such that they facilitate interdisciplinary teamwork. For example, reductions in all-cause hospitalizations and medical costs as well as improved survival rates have been observed with multidisciplinary teams (Peterson et al., 2008). The teams document pharmacologic as well as nonpharmacologic therapies, interventions, and outcomes throughout the entire course of care from admission to discharge. Critical pathways require coordinated care from everyone on the healthcare team and delineate which treatments should be done on each day of the patient's stay. Critical pathways have been shown to reduce variations in the care provided, facilitate achieving expected outcomes, decrease delays, and improve cost-effectiveness (Coffey et al., 1992).

Continuous Quality Improvement

Continuous quality improvement (CQI), also called total quality management and total quality improvement, is another mechanism in which interdisciplinary involvement is crucial. W. Edwards Deming, a statistician, introduced methods of CQI with the premise that improved quality will decrease costs because of less rework, fewer mistakes, fewer delays, and better use of people and materials. The Deming method has been incorporated into the day-to-day activities of many major companies (Gitlow & Melby, 1991). CQI enables a cross-functional, interdisciplinary team to examine processes

that could or should be improved. It brings together a team of healthcare workers who know a particular procedure well and takes advantage of the fact that employees generally are more receptive to change when they are active participants in the change process.

CQI can also be viewed as a method of performance appraisal in which structures, processes, and outcomes are assessed to determine specific areas where improvement is needed. It typically follows the FOCUS-PDCA cycle (Graham, 1995):

F: Find a process to improve.

O: Organize a team that knows the process.

C: Clarify current knowledge of the process.

U: Understand sources of process variation.

S: Select the process improvement.

P: Plan the improvement.

D: Do the improvement, collect data, and analyze data.

C: Check and study the results.

A: Act to hold the gain and to improve the process further.

The PDCA cycle is used in the daily management of CQI and is used to determine the actions necessary to maintain, improve, or innovate standard methods to achieve measurable benchmarks. Inherent within CQI is the belief that it is wiser to maximize efforts to design a product or process to be right the first time and to minimize resources devoted to inspection and repair caused by poor processes (Wakefield et al., 1994). Patient-focused care builds upon previous CQI healthcare efforts by focusing on ways to improve continuity of care and by examining what, if any, changes in underlying structures and processes may be required. In a patient-focused care organization, CQI functions as a methodology for examining and improving the process of care and patient-care outcomes, regardless of internal departmental or profession-based organizational boundaries.

Pay for Performance

Pay for performance (P4P) in health care is a topic of wide discussion, especially among managed care executives, for its ability to contain costs, to improve health outcomes, and to raise the overall quality of health services. P4P has emerged as a new model built on defined measures, data collection, and public reporting that includes payment incentives aimed at quality, efficiency, and patient satisfaction (ASHP, 2009a). The focus of P4P is on value, which takes into account the relationship between quality and cost. While P4P is not a new concept, it has arrived in health care due to a convergence of events including increasing cost of care, provision of patient-centered care, the progression of evidence-based medicine, the patient safety movement, and the use of electronic data systems and the Internet.

In order to incentivize providers to provide quality care, providers are rewarded in P4P. P4P has been defined by the CMS as "quality based purchasing … the use of pay-

ment methods and other incentives to encourage high quality and patient-focused, high value care" (CMS, 2006, p. 1). An effective P4P program should incorporate clinical quality, efficiency, and patient satisfaction. CMS and other payers are believed to be moving toward this model, as it has been demonstrated to improve quality in a cost-effective manner. P4P programs increasingly are focusing their efforts on outcome and cost-efficiency measures, rather than clinical process measures alone. The use of specific measure sets have increased drastically for outcomes, information technology, and cost efficiency, while measures for patient satisfaction and processes have maintained a similar proportion over the years. Challenges associated with adopting P4P include overcoming physician resistance, determining the necessary size of incentive pools to capture the provider's attention, and finding the resources necessary to continue funding the program (Rosenthal & Dudley, 2007).

There is evidence that P4P programs have an effect on quality. Measurement provides physicians with a new perspective on their practice and encourages change in their processes and delivery systems in order to meet program standards. Adoption of process changes in order to meet the benchmarked standards have shown that some organizations have difficulty in achieving national standards, specifically small organizations and large organizations. However, the use of national standards helps rewards programs get started (O'Kane, 2007) in order to incentivize providers to meet these standards of care. The development of national standards that are globally accepted, and consistent requirements to meet the standards are key in implementation of CQI to achieve them.

Healthcare Services and Technological Advances

Both healthcare services and the professions providing care are influenced by the introduction of new technologies. Health information technology has been shown to improve quality by increasing adherence to guidelines, enhancing disease surveillance, and decreasing medication errors (Chaundhry et al., 2006). Technological advances have made many new procedures and methods possible; for example, robotic devices automate many of the tasks associated with medication dispensing. In addition, personal digital assistants and similar handheld devices provide physicians and pharmacists with updated drug information. Moreover, the exchange of information between healthcare practitioners and the information acquisition by patients has changed exponentially when compared to past decades. The movement toward quality health care is believed also to involve the creation of interoperable transparent systems with an ultimate goal of developing an electronic health record for each patient to be used by all involved in the healthcare system.

The fragmented nature of the U.S. healthcare system includes thousands of hospitals, many thousands of healthcare professionals (e.g., physicians, nurses, and pharmacists), and many more thousands of facilities and other interested parties. This environment creates an ideal situation and incentive to incorporate technologies that can span different sites and caregivers in order to help integrate services. With the large volume of transactions in the system and the need to integrate new scientific evidence into practice and other complex information management activities, the limitations of paper-based information management are obvious (Chaundhry et al., 2006).

There is the potential for many of the key players to resist the adoption of new technologies, such as electronic health records (EHRs). While the benefits of health information

technologies are clear, adapting new information systems to health care has proven difficult and rates of use have been limited. In fact, most technology applications have been created for administrative and financial transactions rather than for delivering clinical care (Chaundhry et al., 2006). Reforming the system such that incentives are provided to patients and providers is considered to be a first step toward engaging and implementing a healthcare system for all health professionals to provide better patient care. An example of incentivizing the adoption of technology-based practice changes would be e-prescribing. CMS established an incentive-disincentive program to speed the adoption of e-prescribing by Medicare providers. Beginning in 2009, CMS provided incentives for the adoption of e-prescribing for 3 years; however, beginning in 2012, CMS will add financial penalties for providers who fail to adopt e-prescribing (CMS, 2010).

In order to ensure safe medication and procedure delivery within hospitals, organizations have implemented the use of technology such as bar codes on patient admission bracelets, requiring these scans to match electronic records prior to completing procedures and medication dispensing. Electronic health records and electronic medical records have been cited as a method to increase communication between healthcare professionals and allow for continuity of care. While all these structure and process changes within the system are made to positively affect patient health outcomes, it remains the responsibility of the *professionals* in healthcare to develop and maintain methods to sustain quality health care, as it is what we have committed to when becoming professionals. It appears that today's version of interdisciplinary collaboration requires electronic systems to facilitate communication. While health information technology is one method in making this a possibility, electronic health records will only work if they are utilized to their fullest extent. Overcoming adoption barriers and utilizing the new systems to their capability are imperative to creating a fully functional system.

CONCLUSION

Interdisciplinary care is becoming more important as providing quality care becomes the gold standard for practitioners. There are a number of factors that will help ensure good quality health care (NCQA, 2007), which are:

1. Effectively utilize the best available medical research.
2. Ensure complete information exchange regarding a patient's health to other practitioners.
3. Coordinate care among multiple professionals.
4. Provide comprehensive, continuous care.
5. Pay for quality instead of volume.
6. Engage patients in their care.

Understanding the role and function of others in the healthcare system is the first step to providing collaborative interdisciplinary care. It is important to note that people are not the focus of quality; rather it is achieved through refinement of an organization's standard methods (best practices) through the use of CQI. CQI occurs through modifying standard methods as well as via system changes of structure and processes. While most of the system changes are not visible to the patient, these changes are made to provide better care.

QUESTIONS FOR FURTHER DISCUSSION

1. Consider the characteristics of a profession; in light of those characteristics, discuss pharmacy. For each of the characteristics where pharmacy does not possess or partially possesses the requirement, what remedies do you recommend?
2. Are the characteristics that have been applied historically to occupations for the purpose of defining professions relevant today? Why or why not?
3. How is it that your pharmacy education will prepare you to practice as part of a multidisciplinary team? An interdisciplinary team?
4. What are the potential benefits of engaging in collaborative practice agreements? What are the risks?
5. Collaborative practice agreements refer to the practice where healthcare providers (e.g., physicians) authorize pharmacists to perform specific activities to help patients achieve better health outcomes. In which areas of pharmacy practice would you expect most to have a collaborative practice agreement, and why?
6. People are not the focus of change; rather it is believed that developing systems that require people to provide a high quality of care through refinement of an organization's standard methods should be our focus to bring about needed change. What types of health care *system* changes can be made to facilitate establishing continuity of care and the medical home as the typical standard of care?
7. Critical pathways include providing continuous quality improvement, decreasing service fragmentation (increasing continuity of care), optimizing cost-effectiveness of healthcare delivery, guiding the patient and family through expected treatment and progress, and increasing satisfaction of patients, families, staff, physicians, and third-party payers. These pathways are typically implemented for high-volume, high-risk, or high-cost procedures. Many of the studies have demonstrated the utility of critical pathways in an institutional setting. How might this concept be applied to a community pharmacy setting?
8. Technology and the possibility of electronic health records have been repeatedly touted as the solution to eliminating the fragmentation of the healthcare system. Most of this chapter has discussed how these changes will influence practitioners. How do you think these changes will influence patients' interactions with healthcare professionals? What are the pros and cons from the patient perspective?
9. Suppose you were asked by a national pharmacy organization to increase utilization of patient-reported quality measures. Describe how you would get patients to use these services and how you would get practitioners and payers to use the results from these patient-reported measures. What influence will increased utilization of patient-reported measures have on practice?

KEY TOPICS AND TERMS

Collaborative working relationships
Continuity of care
Continuous quality improvement
Critical pathway
Health information technology
Interdisciplinary care
Medical home

Multidisciplinary care
Patient-focused care
Pay for performance
Profession
Professional
Quality of care

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