The Profession of Pharmacy

INTRODUCTION TO PHARMACY

Pharmacy Today

Welcome to the profession of pharmacy technology. You’re about to embark on a journey that will lead you to a rewarding career. Pharmacy technicians are a very important part of the ever-changing world of healthcare. The changes occurring in healthcare directly affect the profession of pharmacy, causing the pharmacy technician profession to grow rapidly. There’s a long history behind the growth of pharmacy technicians as educated professionals.

Not long ago, technicians were referred to as clerks or secretaries and were often unrecognized and unappreciated for their contributions to the profession. They were trained on the job and had a wide range of involvement in the pharmacy area, from ringing up a cash register to mixing and labeling medications.

Today, knowledgeable pharmacy technicians perform many of the tasks that pharmacists used to perform. To better help patients, pharmacists must spend more time counseling them, providing drug information, and reviewing the use of their medications. Technicians have become more valuable as assistants by completing the tasks that pharmacists must leave behind. Though ultimately under the supervision of the pharmacist, pharmacy technicians provide invaluable assistance as they work confidently to fulfill many of the responsibilities behind the retail, or community, pharmacy counter or behind the scenes in an institutional pharmacy.
Since certain high standards must be met by all healthcare professionals, pharmacy technicians are increasingly being required by employers, and even state boards of pharmacy, to prove that they’re sufficiently knowledgeable and competent to work in a pharmacy setting. Technicians must demonstrate that they’ve reached and will maintain a certain level of knowledge. Many study in formal training programs, take voluntary certification exams, and attend continuing education classes. Education and certification pave the way for increased pay and the opportunity for advancement. In addition, an ever-changing healthcare environment and the involvement of interested professionals have helped pharmacy technicians to become appreciated, recognized, and promoted.

In some form or other, healthcare has existed for centuries. In ancient days, some people were considered to be healers. Rest, proper diet, exercise, and stress reduction were often used to treat those who were ill. Also, early physicians often used medicinals that were made from natural sources, such as plants, minerals taken from the ground, and animals. Many of the techniques that were used by ancient physicians are still being used by advanced medical practitioners today.

As medicine and pharmacy evolved, pharmacy became recognized as a separate profession (Figure 1). Just as there were quack doctors, there were unscrupulous pharmacists who claimed to be healers but in reality were only trying to make a profit. Laws were subsequently written to prevent these people from taking advantage of the public. As new medications became available, it was obvious that all medications needed to be tested for safety and effectiveness. The United States, as well as many other countries, developed regulations to ensure that drugs are sold honestly and used properly and safely.

Today, doctors diagnose ailments and take the necessary steps to help people recover. They may order tests, suggest therapy, or write a prescription for medication. Physicians and other healthcare professionals, including dentists, ophthalmologists, and veterinarians, may also prescribe, or order, drugs. Patients then visit their local pharmacies, where the prescriptions are dispensed by highly trained pharmacists and the technicians who assist them.
What does it mean to *dispense*? Much more is done behind a prescription counter than meets the eye. Many people don’t appreciate the fact that it takes considerable thought and work to fill a prescription properly. There are thousands of medications to choose from. The pharmacist must be able to decipher handwriting and interpret the correct meaning of the prescription. He or she must make sure that the proper medications are selected, that the proper quantities are counted, and that a complete and accurate label is placed on the container. This entire process is called *dispensing.*
In addition to dispensing medications, the pharmacist must counsel patients about the medicinal therapy related to their conditions. Many records must be maintained for legal purposes. Insurance companies must be billed, and rejected claims must be handled. There are countless laws that must be adhered to. All of this can produce a stressful environment if the employees aren’t competent, efficient, and reliable. For this reason, the profession needs educated technicians.

Pharmacists, who are the most highly trained professionals in medication therapy, must be able to not only dispense medications, but explain how to use each medication correctly. Even in the busiest pharmacies, pharmacists must take the time to give requested advice to each patient whose prescriptions are filled there. There’s a great need for patients and their caregivers to understand the proper use of the drugs being prescribed. As a result, pharmacists are spending more time with each patient, making absolutely sure that each is receiving the best drug therapy possible. Many healthcare professionals believe that pharmacists should spend even more time with patients. This is another reason why the pharmacy profession needs educated technicians.

Pharmacists are considered *drug information specialists*. In addition to counseling patients, they should review the patient’s medication history each time a prescription is filled and contact physicians with suggestions when necessary. Pharmacists also need to talk with patients to ensure that medications are working properly and contact physicians when there’s a problem. Pharmacists also advise doctors and other healthcare professionals on how to prescribe medications properly. In fact, some pharmacists write prescriptions for drugs, depending on the state in which they practice.

Today, because of the public’s call for high-quality, affordable healthcare, the entire industry is changing. Recent changes have forced pharmacy professionals and educators to examine the way pharmacy is practiced. New laws and policies, as well as the constant development of new drugs, are compelling pharmacists to spend most or all of their time counseling and
tailoring drug therapy to the particular needs of patients. This leaves much work to be done by the trained pharmacy technician.

The ways in which healthcare is being paid for has led to new pharmacy practice settings. These settings are different from the usual drugstore or hospital. Traditional pharmacies in small, local drugstores are disappearing while large grocery store chains and super centers have pharmacies located within their stores. Retail pharmacies now face competition from health maintenance organizations (HMOs) and other managed care insurance organizations, as well as mail-order and Internet pharmacies. You’ll learn more about how HMOs and other managed care plans affect prescription insurance coverage later in your program. Also, pharmacy departments in hospitals are often merging with one another. The word institution is being used as a more general word for hospital, and institutional pharmacy is often used in place of hospital pharmacy.

In the future, there will be fewer hospitals and a greater number of long-term care and home healthcare practices. In home healthcare, not only do healthcare professionals treat those who are sick or injured, but patients’ families are trained to provide care as well. These personal caregivers have been forced to assume much more responsibility than they would in a hospital setting and therefore require guidance from supporting healthcare professionals, including the pharmaceutical team (Figure 2).

Education and Training of Pharmacists

One of a pharmacist’s primary responsibilities is to use his or her knowledge of drugs—how those drugs affect the body and how they interact—to promote the health of the public and protect the public from harm. A pharmacist acquires this knowledge through years of education and hours and hours of on-the-job experience.
Drugs are very complicated and can sometimes do more harm than good if used improperly. New prescription drugs come to the market practically every day. Pharmacists must help other healthcare professionals to understand these new drugs and make them aware of problems that can occur. Since drug abuse is on the rise, it’s also an important duty of pharmacists to make sure that drugs aren’t misused.

The college education involved in training pharmacists has changed over the past 50 years, and it continues to change. In the past, most pharmacists had five years of college education. There are a few pharmacists practicing today who have had only four years of college. Either group has been awarded the bachelor of science (B.S.) degree in pharmacy. All pharmacists with a bachelor of science degree in pharmacy are called registered pharmacists and have the initials R.Ph. after their names.
Today, most pharmacy colleges offer a pharmacy degree called the Pharm.D., or doctor of pharmacy degree. This degree may be obtained in two ways: entry-level and add-on. The six-year Pharm.D. degree is now the pharmacy profession’s entry-level degree. Entry-level programs are begun and completed at the same institution and provide continuity in the overall educational program. Many, if not all, of these pharmacy students really take seven years of classes in a six-year period by attending college for two summers during the normal summer vacation time.

Some pharmacy colleges offer an add-on Pharm.D. degree. Pharmacists who graduated with a B.S. in pharmacy may “add on” the Pharm.D. degree by attending two more years of college. This type of Pharm.D. program isn’t offered at all pharmacy colleges, which makes it difficult for some who wish to obtain the advanced degree.

Pharmacy students must take a variety of basic classes, including writing, sociology, history, ethics, philosophy, psychology, and communications. They must also have a broad background in advanced math, chemistry, and biology. They take chemistry and biology classes throughout their college education. They take many classes that teach how each drug works in the body. All of the side effects and interactions of each drug with other drugs, food, and diseases are learned.

Pharmacy students learn how to make medications from basic ingredients in a laboratory. They learn about the various types of machinery and processes used to make medications on a much larger scale in factories. They also study the chemical structures of all available drugs and learn which parts of these chemicals make the drugs work in the body and which parts of the chemicals cause side effects. In addition, pharmacy students learn the many laws that must be followed to dispense a drug properly. There are also many laws about drug packaging, labeling, and record keeping that students must learn.

Pharmacists must apply what they’ve learned to help patients and other healthcare professionals use medications wisely. In fact, the first and foremost duty of a pharmacist is to help patients with their medications. They learn how
to communicate difficult drug information to doctors, but they also learn how to communicate the same information on a simpler level to the average person.

Today, the doctor of pharmacy degree includes the traditional classwork of the R.Ph. degree, as well as a full year devoted to hands-on experience. Students must now have experience in hospital, retail, and clinical pharmacy. Students must also pick elective rotations, which are usually in specialties that they might eventually pursue. Examples of elective clerkships include hematology/oncology, veterinary pharmacy, and the pharmaceutical industry.

Most graduates of a pharmacy college choose a career as a pharmacist. Some may choose to further their education by obtaining a degree other than a Pharm.D. Options are a master’s degree (two additional years) or a Ph.D. (three or four additional years). With these advanced degrees, the student can pursue careers in teaching, research and report writing, or hospital administration.

Pharmacists who wish to become specialists in a certain area may do so through examinations that are governed by one of the following organizations: the Board of Pharmaceutical Specialties (BPS), the American Society of Health System Pharmacists (ASHP), or the American College of Clinical Pharmacy (ACCP). Each specialty has eligibility and experience requirements, as well as a comprehensive exam covering that particular specialty. For example, a pharmacist who has successfully completed the requirements and examination for oncology pharmacy will have the initials BCOP (Board Certified in Oncology Pharmacy) after his or her name and degree.

The practical experience that must be obtained while attending college can help students decide which area of practice best suits them. As previously mentioned, practical experience can be obtained through internships, externships, and clerkships. As a pharmacy technician, you’ll come into contact with these undergraduates regularly. Each state has its own definition and requirements for internships, externships, and clerkships.
Laws Regulating the Profession

Pharmacists must adhere to many laws. A complete discussion of these laws will be provided in a later study unit. To begin our look at the legal aspects of the field of pharmacy, we’ll discuss how pharmacists are licensed and their basic legal responsibilities in a pharmacy.

Licensing of Pharmacists

In the United States, all pharmacists must take and pass a registration examination in the state(s) in which they wish to practice. This exam is written and governed by the National Association of Boards of Pharmacy (NABP). The exam may be taken only by graduates from an accredited, or approved, college of pharmacy. Those who attend a five- or six-year program take the same exam.

Other types of exams are available for those who wish to prove that they’ve achieved a higher level of knowledge. Although these specialty exams aren’t required, they give more credentials to clinical pharmacists who have studied beyond the basic requirements.

To become registered, pharmacy students must also have completed a practical experience requirement. Every state has a licensing board called the state board of pharmacy. Among other things, the state board of pharmacy helps to administer the exam to graduates. When a pharmacist completes all of these requirements, he or she is licensed and registered.

The requirements for technicians will be discussed later in this study unit.

The R.Ph. or Pharm.D. degree allows the pharmacist to work as an employee in a pharmacy. A copy of the pharmacist’s license must be displayed prominently at the pharmacist’s place of employment. If the pharmacist is employed in more than one location, he or she must display the license at the location he or she works most often. If this license isn’t renewed, the pharmacist may not practice pharmacy. The owner or director of a pharmacy must be able to prove that
all of the employed pharmacists have current licenses. The licenses are usually photocopied and kept on file for state board inspections.

The North American Pharmacist Licensure Examination (NAPLEX) is required in all U.S. jurisdictions except California, which administers its own exam. Most states also require the pharmacist to pass a drug law examination known as the Multistate Pharmacy Jurisprudence Examination (MPJE). In addition, some states require pharmacists to pass a laboratory or practice exam to ensure that they can prepare and dispense medications safely and correctly. Today, all state boards of pharmacy require pharmacists to complete an internship or externship of approximately 1500 hours before being licensed.

In most states, the pharmacist's license is renewed every year by sending a fee plus an update on where he or she has practiced for the past year. Some state boards of pharmacy want to know exactly where the pharmacist has practiced and what types of functions he or she has performed. Most, if not all, states require the pharmacist to notify the state board if he or she relocates from his or her private residence, or changes his or her primary place of practice. In most states, the pharmacist must report continuing education credits on the renewal application. Most states require pharmacists to obtain approximately 15 continuing education (C.E.) credits per year to obtain relicensure.

License to Operate Pharmacies

Every pharmacy that dispenses drugs must display a terminal distributor’s license. This license is purchased by the pharmacy and signed by the pharmacist in charge. The person who signs the license is ultimately responsible for all activity that occurs within the pharmacy.

This isn't to say that other pharmacy employees aren't responsible for their activities, but it does imply that the pharmacist in charge must make every possible attempt to ensure and prove that all laws, rules, and regulations are followed in that pharmacy. The government is also concerned
about knowing where to find the licensed pharmacist, so that he or she can be questioned concerning any illegal activity related to the pharmacy.

Drugs that require a prescription are considered dangerous and may be ordered only by a physician (or in some states by a pharmacist or physician assistant, as well). The written order for a drug is called a prescription. The law that made prescriptions a requirement for dangerous drugs is part of the *Food, Drug, and Cosmetic Act*. This act was written very early in the 1900s in response to some awful things that happened to people because of medicine. For example, several deaths occurred due to toxic additives. In the 1950s, amendments were added to the *Food, Drug, and Cosmetic Act*.

In 1951, the *Durham-Humphrey Amendment* was passed by Congress and required prescriptions for dangerous drugs. This amendment stated exactly what must be on a prescription before the medication could be filled for a patient by a pharmacy. Another amendment, the *Kefauver-Harris Amendment*, regulated the pharmaceutical industry, major manufacturers, and researchers of drugs. This amendment required that studies be done to prove that a new drug is safe and effective for human use. It also required sanitary conditions at the manufacturing facilities. A drug made or dispensed in a facility or pharmacy that has unsanitary conditions is called an *adulterated* drug.

Labeling a filled prescription is also defined by law. The label that’s created in a pharmacy must be complete and correct. The label, which is placed on the outside of the container includes important information. If any information is missing, the prescription is referred to as *misbranded*. The labeling law also applies to labels that come from the manufacturer. If the required information isn’t there, again, the container is said to be misbranded. Adulterated or misbranded drugs may not be dispensed to the public. In addition to lost income, many pharmacies have lost their licenses to operate because these laws were broken.
Professional Pharmacy Organizations

There are many professional organizations that pharmacists and technicians can join. It’s very important to become involved in these organizations since the members are the ones who become the leaders, and the leaders are the ones who help provide direction to the profession. The members of the various pharmacy and technician organizations help lawmakers to determine policies by presenting an organized voice to the policymakers.

Each organization has chapters on national, state, and local levels. These associations may be headed by volunteers, or they may pay people to run them. The leaders are very important sources of information. They help to form policy and law, depending on the desires of their members.

In addition to the organizations listed below, there are several organizations devoted solely to the professional needs of pharmacy technicians. You’ll learn about these organizations later in this study unit.

The American Pharmacists Association (APhA)

The American Pharmacists Association (APhA) was founded in 1852 as The American Pharmaceutical Association. It involves related organizations at state and local levels so that pharmacists have a voice in the collective opinion of the organization. Members vote on issues at local levels and then send their opinions to higher levels. The executive director of the APhA speaks with national politicians whenever a major issue affecting the pharmacy profession must be addressed. Members represent many pharmaceutical specialties. Technicians and other pharmaceutical professionals may become associate members of APhA.

The American Society of Health-System Pharmacists (ASHP)

The American Society of Health-System Pharmacists (ASHP) changed its name from the American Society of Hospital Pharmacists (ASHP) to reflect the changes in pharmacy and healthcare such as the mergers of many hospitals and clinics
into larger health systems. The ASHP serves its membership in the same way that the APhA does and often works closely with the APhA. The ASHP supports pharmacists who practice in hospitals, health maintenance organizations, long-term care facilities, home care, and other components of healthcare systems. ASHP membership includes those in hospital, health system, consulting, home healthcare pharmacy, and HMOs—just about everyone except those who work solely in retail pharmacy. The majority of members are pharmacists, but there are associate memberships for others, including technicians. ASHP provides technician-focused continuing education, as well as resources and member services for technicians.

The American Association of Colleges of Pharmacy (AACP) and the Pharmacy Technician Educators Council (PTEC)

The American Association of Colleges of Pharmacy (AACP) and the Pharmacy Technician Educators Council (PTEC) are made up of those who are concerned with the education of pharmacy professionals. The exchange of ideas among these members is aimed at the continual improvement of education. Although they’re small compared to the above organizations, as educators their voices have an important influence on pharmacy policy.

The Board of Pharmaceutical Specialties (BPS)

In 1973, a task force on pharmaceutical specialties was developed by the APhA. Out of this task force, the Board of Pharmaceutical Specialties (BPS) was born. The BPS recognizes specialties in pharmacy practice and sets standards for certification in these specialties. It evaluates individuals seeking certification and serves as a coordinating agency for pharmacy specialties. These specialties include nutrition support pharmacy and pharmacotherapy, as well as nuclear, hematology/oncology, and psychiatric pharmacy.
Self-Check 1

At the end of each section of *The Profession of Pharmacy*, you’ll be asked to pause and check your understanding of what you’ve just read by completing a "Self-Check" exercise. Answering these questions will help you review what you’ve studied so far. Please complete Self-Check 1 now.

1. The entry-level degree required for pharmacists is the _______.
2. Another name for a retail pharmacy is a(n) _______ pharmacy.
3. The largest organization for pharmacists is called the _______.
4. The process of writing orders for medications by physicians is called _______.
5. The process of filling and labeling prescriptions to be given to a patient is called _______.

**Check your answers with those on page 45.**