SECTION I

The Case for Pharmacy Residencies

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CHAPTER 1

Introduction to Postgraduate Training Opportunities

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You can always amend a big plan, but you can never expand a little one.

—Harry Truman

QUESTIONS TO PONDER

1. Why should someone consider postgraduate training?
2. What is the primary purpose of a pharmacy residency?
3. How do pharmacy residencies and fellowships differ?
4. Who should consider an additional degree?

The term *postgraduate training* in pharmacy describes additional preparation that one completes after a doctor of pharmacy (PharmD) degree. Combined degree programs—for example, merging a PharmD with master of public health (MPH) or doctor of philosophy (PhD)—achieve the same goals as certain postgraduate training but do so in a way that allows individuals to complete two programs concurrently over a shorter period. After graduation, a variety of postgraduate training opportunities exist, including additional degrees, fellowships, and residencies. Certificate programs (e.g., immunizations) also fall under the heading of postgraduate training, although they are limited in scope. The purpose of this chapter is to provide a brief overview of major types of postgraduate training, examine reasons to consider additional experience, and characterize how pharmacy

residencies differ from other postgraduate opportunities. Subsequent chapters in Section I provide details regarding the various pharmacy residencies available to graduates.

REASONS TO CONSIDER POSTGRADUATE TRAINING

The motivation to pursue postgraduate training varies depending on the student's areas of interest. Irrespective of the chosen career path, the rationale to complete additional training revolves around a sincere desire to excel as a clinician, researcher, and/or pharmacy leader. Residency training in general prepares individuals to be a pharmacy practice leader, although some advocate the combination of a residency/master of science (MS) to prepare one uniquely for leadership roles.[1] The PharmD/master of business administration (MBA) can also serve this purpose in certain situations.

A student pharmacist should consider a pharmacy residency to expand his or her clinical skills.

A student pharmacist should consider a pharmacy residency to expand his or her clinical skills. For those who have not yet chosen an area of practice, postgraduate training can help to explore the various fields of pharmacy practice and potential career opportunities. Additionally, individuals who complete a residency program are more competitive for clinical positions that provide direct patient care. Residency training is becoming a standard that is necessary for pharmacists to provide high-quality direct patient care. For more discussion on the benefits of residency training, see Chapter 2, "The Value of Residency Training and Vision for the Future."

For individuals interested in becoming a clinical pharmacy scientist, an additional degree (e.g., PhD, MS, MPH), fellowship, or both is necessary to develop requisite research skills. These programs differ based on the number of training years, thesis/dissertation requirements, and funding to support the program.[2]

RESIDENCIES

A pharmacy residency is an organized postgraduate training program in a distinct area of pharmacy practice.[2] Residencies can take place in several healthcare environments, including the hospital, community pharmacy, long-term care facility, ambulatory care clinic, and managed care organization, among others. Some programs may be associated with or contained within a college or school of pharmacy. School-based residency programs may have greater emphasis on teaching and/or develop residents into academicians.

A pharmacy residency serves as a bridge between pharmacy school and proficient clinical practice.

The primary goal of a pharmacy residency is to develop direct patient care skills. As compared to fellowships (discussed later in this chapter), approximately 80% of time in a residency is devoted to clinical practice. A pharmacy residency serves as

Table 1-1 Notable Dates in the Development of Pharmacy Residencies

1930s	Internships
1948	ASHP* standards for internships developed
1962	ASHP accreditation standards for hospital pharmacy residencies adopted
1992	ASHP commissions a project that led to the Residency Learning System (RLS)
2005	New accreditation standards regarding postgraduate year one (PGY1) and postgraduate year two (PGY2) residencies (enacted in 2007)

*ASHP: American Society of Health-System Pharmacists

Source: Adapted from American Society of Health-System Pharmacists. History of residency training. http://www.ashp.org/menu/Residents/GeneralInfo/ResidencyHistory.aspx. Accessed March 31, 2011.

a bridge between pharmacy school and proficient clinical practice. **Table 1-1** outlines important dates in the development of pharmacy residencies.[3]

The initial purpose of pharmacy residencies was to train hospital pharmacy leaders and managers. In subsequent years, beginning in the late 1960s, the aim of residencies changed, with the primary purpose being to develop clinical pharmacists. Starting in the 1970s and continuing into the 1980s, accreditation standards were developed.[4] More recently, the American Society of Health-System Pharmacists (ASHP) House of Delegates and the American College of Clinical Pharmacy (ACCP) adopted the stance that by the year 2020 the completion of an ASHP-accredited residency should be a requirement for all new college of pharmacy graduates who will be providing direct patient care.[5,6] The major barrier to reach this goal is an insufficient number of residency positions to meet student demand. To help meet this shortcoming, a change in the residency practice model has been proposed that includes a higher resident-to-preceptor ratio and different service roles for residents.[7]

ASHP accredits residency programs, although there remain a fair number of programs that choose not to go through this accreditation process. ASHP released new accreditation standards in the fall of 2005, which took effect in 2007.[8] One of the most pronounced changes within these standards was the establishment and differentiation of postgraduate year one (PGY1) and postgraduate year two (PGY2) residencies. Pharmacy graduates seeking an accredited pharmacy residency can consider PGY1 residencies only, specifically those occurring in the institutional, community pharmacy, or managed care areas. **Figure 1-1** compares PGY1 and PGY2 residencies in regards to depth of knowledge, skills, abilities, and patient–practice focus. Subsequent chapters in this section of the book provide details regarding these residency programs. Accredited residencies have a higher perceived value since

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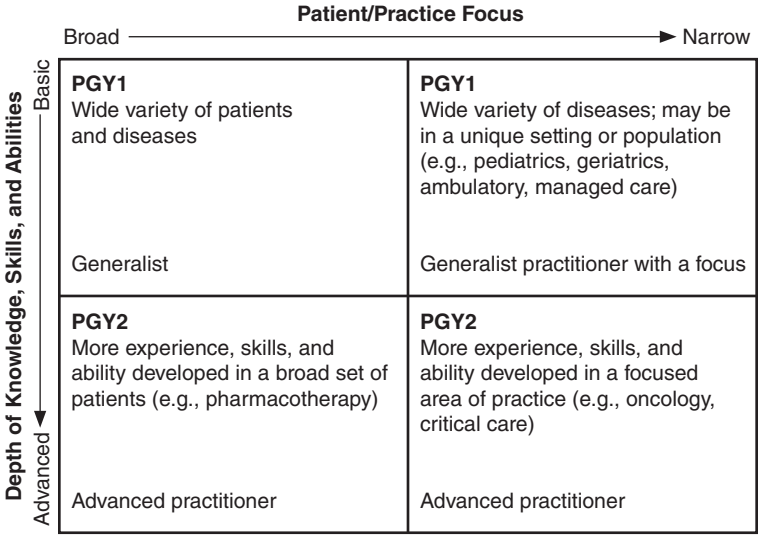

Figure 1-1: Current Pharmacy Residency Model

Source: Teeters JL. New ASHP pharmacy residency accreditation standards. *Am J Health Syst Pharm*. 2006;63:1012–1018. (R1034)

they help to ensure a minimal standard of quality. Importantly, individuals must complete an accredited PGY1 residency to be eligible for a PGY2 program. Based on the most recent accreditation standards, both PGY1 and PGY2 ASHP-accredited programs now go through a standardized process to match applicants with pharmacy residency programs, which is discussed in Chapter 16, "The Residency Matching Program."

OTHER POSTGRADUATE TRAINING OPPORTUNITIES

For individuals interested in postgraduate training, there are various options other than pharmacy residencies to consider. These opportunities, listed in the following pages, prepare graduates for expanded research and/or business skills. **Figure 1-2** provides an overview of contemporary training programs that prepare one to be a clinical pharmacy scientist.

• Fellowships

A fellowship is a directed, highly individualized postgraduate training program that is usually research based and less clinically oriented than a residency program. Fellowships may occur in a variety of settings, including colleges or schools of pharmacy and the pharmaceutical industry. A research

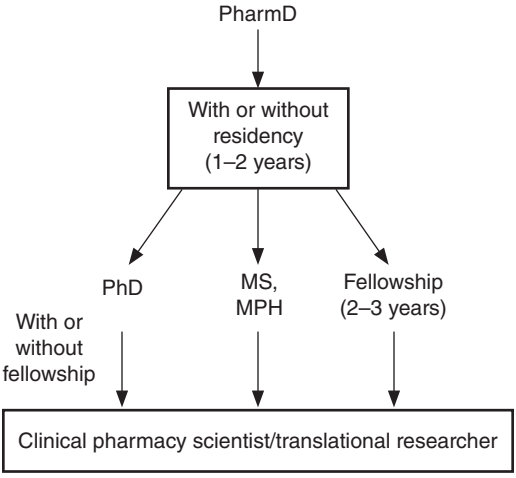

Figure 1-2: Contemporary Approaches to Become a Clinical Pharmacy Scientist
PharmD: doctor of pharmacy; PhD: doctor of philosophy; MS: master of science; MPH: master of public health

Source: Modified from Fagan SC, Touchette D, Smith JA, et al. The state of science and research in clinical pharmacy. P*harmacotherapy.* 2006;26:1027–1040. Reprinted with permission.

fellowship is designed to prepare the participant to function as an independent investigator.[1] In these types of programs, research accounts for approximately 80% of the fellow's time. Importantly, there are an increasing number of nonresearch fellowships available in the pharmaceutical industry. In general, fellowships take a minimum of two years to complete.

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• Doctor of Philosophy

A doctor of philosophy (PhD) is the highest academic degree an individual can earn. A PhD candidate may complete the advanced degree concurrently with a PharmD or upon graduation. The primary purpose of a PhD is to prepare graduates for professional roles in research. It consists of course work followed by focused, substantial research culminating in a formal, published dissertation.[1] A PhD generally takes four to six years to complete, but it may be shorter if completed concurrently with a PharmD.

• Master of Science

A master of science (MS) may be completed after or simultaneous with a PharmD. This degree consists of formal course work that may include biostatistics, clinical trial design, and other relevant discipline-specific topics.[1] This represents another option to develop research skills. The usual amount of time needed to complete an MS, if not accomplished concurrently with a PharmD, is two years. A formal, written thesis may be required.

• Master of Public Health

A master of public health (MPH) focuses on public health practice, and candidates may complete it in tandem or after the PharmD. If it is completed concurrently, it may require only one additional year of study. Similar to the PhD and MS, the MPH includes required course work. In addition to

enhancing research skills, a traditional MPH allows candidates to focus in one of six core areas, including biostatistics, epidemiology, health service administration, health education, behavioral science, and environmental science.[1,9] If the Council on Education for Public Health (CEPH; www.ceph.org) accredits the program, there is thesis and practicum requirements.[9]

• Master of Business Administration

The master of business administration (MBA) degree is suited for students interested in the management of human or other business resources. If completed concurrently with a PharmD, it may require only one additional year of study. Conversely, MBA degrees completed after graduation are full-time (two years), accelerated, part-time, or executive programs (e.g., weekends). Specialized areas of MBA programs include accounting, economics, finance, and management, among others.

KEY POINTS

- Postgraduate training allows one to develop expertise as a clinician, researcher, and/or leader.
- The primary goal of a pharmacy residency is to develop clinical skills; it serves as a bridge between pharmacy school and proficient clinical practice.
- A research fellowship is designed to prepare the participant to function as an independent investigator; there are an increasing number of nonresearch fellowships available in the pharmaceutical industry.
- Additional or combined degree programs help one develop research or business skills.

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