

ACCP WHITE PAPER

Desired Professional Development Pathways for Clinical Pharmacists

American College of Clinical Pharmacy

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The 2012 American College of Clinical Pharmacy (ACCP) Certification Affairs Committee was charged with developing guidelines for the desired professional development pathways for clinical pharmacists. This document summarizes recommendations for postgraduate education and training for graduates of U.S. schools and colleges of pharmacy and describes the preferred pathways for achieving, demonstrating, and maintaining competence as clinical pharmacists. After initial licensure within the state or jurisdiction in which the pharmacist intends to practice, completion of an accredited PGY1 pharmacy residency is recommended to further develop the knowledge and skills needed to optimize medication therapy outcomes. An accredited PGY2 pharmacy residency should be completed if a pharmacist wishes to seek employment in a specific therapeutic area or practice setting, if such a residency exists. Clinical pharmacists intending to conduct advanced research that is competitive for federal funding are encouraged to complete a fellowship or graduate education. Initial certification by the Board of Pharmacy Specialties (BPS) or other appropriate sponsoring organizations should be completed in the desired primary therapeutic area or practice setting within 2 years after accepting a position within the desired specific therapeutic area or practice setting. Clinical pharmacists subsequently will need to meet the requirements to maintain pharmacist licensure and board certification. Traineeships, practice-based activities, and certificate programs can be used to obtain additional knowledge and skills that support professional growth. Pharmacists are strongly encouraged to adopt a lifelong, systematic process for professional development and work with ACCP and other professional organizations to facilitate the development and implementation of innovative strategies to assess core practice competencies.

Key Words: clinical pharmacist, professional development, pharmacy residency, board certification, pharmacy fellowship, continuing pharmacy education.

(*Pharmacotherapy* 2013;33(4):e34–e42)

The pharmacy profession is evolving from a product-oriented to a patient-oriented profession, with increasing involvement of clinical pharmacists in direct patient care.¹ In a 2008 white paper, the American College of Clinical Pharmacy (ACCP) defined a clinical pharmacist as one who

provides patient care that optimizes medication therapy and promotes health, wellness, and disease prevention.² The value of clinical pharmacists as integral members of interprofessional health care teams is well documented.^{3–8} Of importance, direct patient care services can be

provided in virtually any practice setting, including community pharmacies, ambulatory clinics, physician offices, managed care organizations, hospitals, and health systems.⁹ In 2012, the Centers for Medicare & Medicaid Services (CMS) revised its conditions of participation to include pharmacists and other practitioners as eligible candidates for the medical staff, with privileges to practice in the hospital in accordance with state law.¹⁰ This change permits hospitals to allow pharmacists to perform all patient care functions within their scope of practice.

As pharmacy practice evolves, the education and postgraduate training of pharmacists must ensure that pharmacists are adequately prepared to assume advanced practice roles in direct patient care. The 2012 ACCP Certification Affairs Committee was charged with developing guidelines that articulate the desired professional development pathways for clinical pharmacists (e.g., postgraduate training, certification, recertification, or other mechanisms to achieve and maintain practice competence). This document summarizes recommendations for postgraduate education and training for graduates of accredited U.S. schools and colleges of pharmacy and describes the preferred pathways for achieving, demonstrating, and maintaining competence as clinical pharmacists.

Steps to Becoming a Clinical Pharmacist

Entry-Level Pharmacy Degree

Student pharmacists must successfully complete the program requirements of a school or college of pharmacy accredited by the Accredita-

tion Council for Pharmacy Education (ACPE) to be awarded a doctor of pharmacy degree (Pharm.D.).¹¹ The didactic courses include a minimum of 2 years of preprofessional coursework, followed by a professional program consisting of four academic years or the equivalent number of hours or credits. The experiential courses include a minimum of 300 hours of introductory pharmacy practice experiences (IPPEs) within the initial professional years and at least 1440 hours (36 weeks) of advanced pharmacy practice experiences (APPEs) in the final professional year in community, hospital, and other practice settings.¹¹

Pharmacy Licensure

Pharm.D. graduates must then become licensed as a registered pharmacist (R.Ph.) by a state or jurisdiction before beginning practice as a pharmacist in that state or jurisdiction. Candidates for pharmacy licensure in all states must successfully pass the North American Pharmacist Licensure Examination (NAPLEX) administered by the National Association of Boards of Pharmacy (NABP).¹² The NAPLEX is a computer-based examination consisting of 185 multiple-choice questions encompassing the following areas:

- Area 1: Assess Pharmacotherapy to Ensure Safe and Effective Therapeutic Outcomes (approximately 56%).
- Area 2: Assess Safe and Accurate Preparation and Dispensing of Medications (approximately 33%).
- Area 3: Assess, Recommend, and Provide Health Care Information That Promotes Public Health (approximately 11%).

Mean national NAPLEX pass rates for first-time candidates typically exceed 95%.¹³ Although the examination might be sufficient to assess the minimal knowledge needed to practice pharmacy, some have suggested that the NAPLEX should be modified to measure the candidates' ability to apply their knowledge to clinical practice situations.¹³

The NAPLEX is just one component of the licensure process used by the boards of pharmacy to assess a candidate's competence to practice as a registered pharmacist. Additional requirements for licensure differ among the states and jurisdictions, but they generally include a minimum age (e.g., at least 18 years), graduation from an accredited pharmacy school, and completion of a minimum number of internship hours.¹⁴

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The work was performed on the employee's personal time and does not represent the views of the U.S. Food and Drug Administration.

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The boards of pharmacy also require a candidate to demonstrate knowledge of state and federal pharmacy law. Currently, 48 states or jurisdictions have adopted the Multistate Pharmacy Jurisprudence Examination (MPJE) to assess knowledge of state and federal pharmacy law; exceptions include Arkansas, California, Guam, Puerto Rico, Virginia, and the Virgin Islands.¹⁵ The MPJE is a 2-hour, computer-adaptive examination consisting of 90 multiple-choice questions. Each state board of pharmacy approves questions applicable in its jurisdiction. The test encompasses three broad areas:¹⁶

- Area 1: Pharmacy Practice (approximately 84%).
- Area 2: Licensure, Registration, Certification, and Operational Requirements (approximately 13%).
- Area 3: Regulatory Structure and Terms (approximately 3%).

Pharmacists can also enter into collaborative practice agreements with one or more physicians to provide collaborative drug therapy management (CDTM). These agreements permit pharmacists to perform patient assessments, order drug therapy–related laboratory tests, administer drugs, and adjust drug therapy.¹⁷ Most states currently permit pharmacists to enter into these agreements, but the minimum requirements for participation vary by the individual board of pharmacy. CDTM is currently supported by several national pharmacy organizations, including the ACCP, the American Society of Health-System Pharmacists (ASHP), and the American Association of Colleges of Pharmacy (AACP).¹⁸

Postgraduate Training and Education

In broad terms, postgraduate educational experiences include residencies for individuals seeking careers in direct patient care and fellowships or graduate degree programs for those desiring careers in research. The ACCP espouses a vision for the future wherein postgraduate residency training is a prerequisite for all pharmacists who provide direct patient care.¹⁹ This position is also held by the ASHP and the AACP.^{20–22} Others have asserted that all pharmacy school graduates should be able to provide direct patient care at a basic level without completing a residency, and that several education, patient care, and economic issues must be resolved before mandating the completion of postgraduate residencies for pharmacists who provide direct patient care.^{23, 24}

The ASHP Commission on Credentialing (COC) currently accredits two levels of residency programs: postgraduate year 1 (PGY1) and postgraduate year 2 (PGY2).²⁵

PGY1 Pharmacy Residency

A PGY1 pharmacy residency is a 1-year program designed to build on the knowledge, skills, attitudes, and abilities gained by graduates of accredited U.S. schools or colleges of pharmacy.²⁶ The residency includes structured goals and objectives that enable residents to develop competency in managing medication-use systems and promoting optimal medication use in patients with a broad range of diseases. The residency also helps develop leadership and problem-solving skills. Most PGY1 pharmacy residencies are associated with hospitals, medical centers, or health systems; the ASHP COC also accredits PGY1 residencies in Community Pharmacy and Managed Care Pharmacy (Table 1). The ACCP has proposed PGY1 residency equivalency programs as a systematic process by which pharmacists could evaluate, document, and demonstrate the equivalency of their practice experience, skills, and knowledge to the expected outcomes of an accredited PGY1 residency program in lieu of completing formal residency training.^{27, 28} The completion of a PGY1 residency is a prerequisite for PGY2 residencies and most fellowships.

Table 1. Postgraduate Year One and Two Pharmacy Residencies

Postgraduate Year One (PGY1)	Postgraduate Year Two (PGY2)
Pharmacy Residency	Ambulatory Care Pharmacy
Community Pharmacy	Cardiology Pharmacy
Managed Care Pharmacy	Critical Care Pharmacy
	Drug Information
	Emergency Medicine
	Geriatric Pharmacy
	Health-System Pharmacy Administration
	Infectious Diseases Pharmacy
	Internal Medicine Pharmacy
	Nuclear Medicine Pharmacy
	Nutrition Support Pharmacy
	Oncology Pharmacy
	Pain Management and Palliative Care
	Pediatric Pharmacy
	Pharmacotherapy
	Informatics
	Psychiatric Pharmacy
	Solid Organ Transplant Pharmacy
	Medication-Use Safety

PGY2 Pharmacy Residency

After completing a PGY1 residency, individuals who desire to provide direct patient care within a specific therapeutic area or practice setting should complete an accredited PGY2 residency, if that specialty residency exists.^{22, 29, 30} For example, in a joint opinion paper, the Society of Infectious Diseases Pharmacists (SIDP) and the ACCP Infectious Diseases Practice and Research Network (PRN) recommended that pharmacists wishing to obtain a clinical position as an infectious diseases pharmacist should complete a PGY2 pharmacy residency in Infectious Diseases, because the specialty area requires a distinctive, in-depth, and dynamic knowledge base and practice skills.³⁰ The completion of a PGY2 residency is also recommended for pharmacists pursuing positions that include research/scholarship or teaching in addition to direct patient care.²¹ PGY2 residencies are often required (or preferred) for academic positions in schools or colleges of pharmacy.

PGY2 pharmacy residencies provide focused, organized training in a specific therapeutic area or practice setting that builds on the knowledge and skills gained during the completion of a PGY1 residency. There are presently 19 designated focus areas for a PGY2 residency (Table 1). These residencies apply a common set of outcomes, goals, and objectives that are designed to increase the depth of the resident's general knowledge, skills, attitudes, and abilities in medication therapy management, clinical leadership, and collaborative research.²⁹ In addition, PGY2 residencies provide in-depth knowledge within a specific practice setting or therapeutic area that prepares residents to pursue board certification, if it exists, in the relevant therapeutic area or practice setting.^{19, 29, 30}

Although PGY2 residencies provide some additional research experience relative to PGY1 residencies, additional education and training through fellowships or graduate degree programs is likely necessary for pharmacists who are seeking or have accepted positions that require a substantial amount of research/scholarship, especially for individuals who wish to obtain competitive external funding.

Fellowship Training

A research fellowship is "a directed, highly individualized, postgraduate training program designed to prepare the participant to function as

an independent investigator."³¹ The purpose of fellowship training is to develop expertise in the scientific research process. Candidates seeking a fellowship within a specific therapeutic area are expected to already possess appropriate practice skills relevant to the knowledge area of the fellowship. Such practice skills are typically obtained through prior experience in practice or through completion of one or more residencies. Fellowship training varies substantially among programs; the duration varies from 1 to 3 years, with 2 years being the most common.³² Formal graduate coursework might be included, and the additional coursework might lead to an additional degree (e.g., M.S., M.P.H., Ph.D.). Fellowships within a specific therapeutic area are usually offered by schools or colleges of pharmacy, academic health centers, or the pharmaceutical industry.³¹ These programs are intended to prepare pharmacists as clinical and translational scientists capable of competing as principal investigators for federal research funding. Fellows often pursue positions in academia or other areas that involve substantial responsibilities in research/scholarship in addition to direct patient care.^{21, 32}

Graduate Programs

Approximately 10 pharmacy schools offer doctor of philosophy (Ph.D.) degrees in clinical pharmaceutical sciences.³² In a 2009 position paper, the ACCP opined that advanced degree programs are the preferred route for developing pharmacists as clinical and translational scientists who can be competitive in the research funding arena.³² Because clinical skills are an important characteristic of clinical scientists, residency training (or its equivalent) should be obtained either before or during the program. Furthermore, the ACCP position paper recommended that the ACCP promote the transition of pharmacy fellowships to degree-granting programs.

Traineeships

Several pharmacy organizations offer postgraduate traineeships.³³ The ASHP Foundation defines a traineeship as "postgraduate, short-term, planned and structured self-study and experiential programs in specified areas of pharmacy practice."³⁴ These programs are intended to impart the knowledge and skills necessary to implement coordinated patient care programs. The ASHP Foundation traineeships include a self-study component of 10–50 hours and an experiential

portion that involves training sessions at a predetermined site for 5–10 days. Traineeships are offered in antithrombotic pharmacotherapy, oncology patient care, and pain and palliative care.

Several other professional societies offer traineeships, including the American Society of Consultant Pharmacists (ASCP) Foundation and the ACCP Academy. The ASCP offers traineeships in Parkinson's disease and pain management.³⁵ The ACCP Academy provides four professional development programs leading to certificates of completion in Career Advancement, Leadership and Management, Research and Scholarship, and Teaching and Learning.³⁶ Pharmacists should consider traineeships as a means of gaining additional knowledge and skills in a specific focus area, but such programs are not a substitute for more broad-based postgraduate education and training.

Practice-Based Activities and Certificate Programs

The ACPE accredits practice-based activities (formerly called Certificate Programs in Pharmacy), which are structured continuing pharmacy education (CPE) programs intended to enhance practice through the attainment of knowledge, skills, attitudes, and behaviors required to implement a new practice activity or program.³⁷ The term *certificate program* is no longer used for these ACPE-accredited activities because of potential confusion with the term *certification*. Establishing programs in diabetes monitoring, immunization delivery, and asthma education are examples of these types of activities. To receive ACPE accreditation, these activities should include didactic (live classroom instruction and/or home study) and experiential components that provide practice time, a demonstration of skills, and an objective assessment to ensure that the participant has achieved a predetermined minimum performance level. The ACPE specifies that the minimum length for practice-based activities is 15 hours. The activity providers typically award statements of continuing education credit to participants who successfully complete the requirements. The providers can also award a certificate upon successful completion of the activity.

Some of the practice-based activities or certificate programs offered by national pharmacy organizations include:

- The American Pharmacists Association (APhA) “Certificate Training Programs” in

Pharmacy-Based Immunization Delivery, The Pharmacist and Patient-Centered Diabetes Care, and Delivering Medication Therapy Management Services.³⁸

- The Society of Infectious Diseases Pharmacists (SIDP) “Certificate Program” in Antibiotic Stewardship.³⁹
- The American College of Apothecaries (ACA) “Instructional Laboratory Programs” in various areas of pharmacy compounding.⁴⁰

Other practice-based activities or certificate programs might be available through other national or state pharmacy organizations, schools or colleges of pharmacy, and health care institutions.⁴¹

Demonstrating Competence as a Clinical Pharmacist

Board Certification

Board certification is a means by which health care professionals can demonstrate clinical competence to the public, employers, third-party payers, and other health professionals. Certification is a voluntary process by which a nongovernmental agency grants recognition to an individual who has met certain predetermined qualifications specified by that organization.⁴¹ This process indicates that an individual health care professional has attained the minimum required knowledge, skill, and/or experience in a specific therapeutic area or practice setting. Certification generally requires an initial assessment (e.g., by examination) and periodic reassessments of the individual's knowledge, skills and experience. Certification programs must be psychometrically sound and legally defensible, and they should be accredited by a recognized accreditation body.

The Board of Pharmacy Specialties (BPS),⁴² an autonomous division of the APhA, is the primary agency that certifies pharmacists. Specialties presently recognized by the BPS include Pharmacotherapy, Nuclear Pharmacy, Nutrition Support Pharmacy, Oncology Pharmacy, Psychiatric Pharmacy, and Ambulatory Care Pharmacy. Critical care, pediatrics, cardiology, and infectious diseases are potential specialties that are currently being considered or developed by the BPS. Moreover, the BPS offers the additional designation of Added Qualifications (AQ) in infectious diseases and cardiology after review of an

application and portfolio submitted by pharmacists already holding the designation of Board Certified Pharmacotherapy Specialist (BCPS). Initial certification for each of the specialties is achieved by examination. The specific eligibility requirements differ among the various specialties, but all prospective candidates must be graduates of an ACPE-accredited school or college of pharmacy, have an active license to practice pharmacy in the United States or one of its jurisdictions, and have documentation of practice time and experience in the relevant therapeutic area or practice setting.

Clinical pharmacists can also seek certification by other certification bodies. For example, the Commission for Certification in Geriatric Pharmacy offers board certification in geriatrics to pharmacists.⁴³ Pharmacists can also seek certification from other organizations that provide certification for pharmacists and other health care providers. Examples include Certified Anticoagulation Care Provider (CACP), Certified Diabetes Educator (CDE), Board-Certified–Advanced Diabetes Management (BC-ADM), Certified Asthma Educator (CAE), Certified Pain Educator (CPE), and HIV Specialist.⁴⁴ As with the certifications granted by the BPS, these organizations grant certification to pharmacists and other professionals after successful examination. Each organization has its own criteria to determine eligibility for pharmacists. These certification programs are recognized across the spectrum of health care disciplines and can be useful to pharmacists seeking credentials that recognize competence in those areas.

The ACCP's position on board certification is that all pharmacists who are responsible (individually or collaboratively) for the pharmacotherapeutic management of patients with complex or special drug therapy needs should be board certified in the therapeutic area or practice setting in which the pharmacist will be practicing within 2 years after accepting a position.^{45, 46}

Maintaining Competence as a Clinical Pharmacist

Maintaining competence refers to measures taken by health care professionals to learn the latest knowledge and develop new skills to keep pace with advances in health care. The public, third-party payers, and employers all expect health care providers to remain competent during the course of their careers. After earning initial licensure, pharmacists must complete the minimum continuing education requirements to

maintain an active license to practice pharmacy. Clinical pharmacists who are certified within a specific therapeutic area or practice setting must also complete continuing education or take a recertification examination to recertify within the specific therapeutic area or practice setting. The current options to maintain licensure and certification are described in this section.

Maintaining Pharmacy Licensure

Continuing Pharmacy Education

The ACPE defines CPE as “a structured educational activity designed or intended to support the continuing development of pharmacists ... to maintain and enhance their competence.”⁴⁷ CPE activities should promote problem solving and critical thinking and be applicable to the practice of pharmacy.⁴⁴ Currently, the boards of pharmacy in 53 states and jurisdictions require pharmacists to participate in CPE activities to renew their license.⁴⁸ The ACPE Continuing Education Provider Accreditation Program is designed to ensure the quality of CPE programs.

Continuing Professional Development

The standard approach to mandatory CPE has been criticized because there is little evidence of a direct relationship between accumulating CPE credit hours and maintaining competence or making practice changes that lead to improved patient outcomes.⁴⁹ Critical reviews of the traditional process of continuing education by the health professions can be found in the Josiah Macy Foundation Report in 2007⁵⁰ and an Institute of Medicine (IOM) report in 2010.⁵¹

Continuing professional development (CPD) offers an alternative to traditional CPE. CPD as defined by ACPE is “the lifelong process of active participation in learning activities that assists individuals in developing and maintaining continuing competence, enhancing their professional practice, and supporting achievement of their career goals.” CPD is a systematic, self-directed, ongoing, and cyclical process in which a practitioner (i) reflects on learning needs and goals, (ii) plans learning activities to meet the needs and goals, (iii) implements the learning plan, (iv) evaluates the success of the plan, and (v) documents learning activities in a professional portfolio.⁴⁹ CPD does not replace CPE; rather, high-quality CPE is an essential component of CPD. CPD has been incorporated

into the continuing education systems in some other countries (Great Britain, Canada, New Zealand) and is being evaluated and considered as a potential model for pharmacists in the United States.^{52, 53} However, implementing CPD profession-wide is associated with several challenges, including understanding and acceptance by pharmacists, the additional time and cost associated with developing and completing CPD relative to CPE, and the need for developing portfolio validation processes.^{53, 54} Clinical pharmacists should work with the ACCP and other professional organizations to facilitate the development and implementation of CPD. Regardless of whether CPD is ultimately required for maintaining licensure, clinical pharmacists should adopt a lifelong, systematic process for maintaining and enhancing clinical competence that embodies the principles of CPD.⁵⁵

Maintaining Board Certification

Pharmacists initially certified by the BPS within a specific therapeutic area or practice setting must recertify every 7 years in accordance with the policies and procedures of the BPS to maintain board certification. Recertification every 7 years is intended to ensure that board-certified practitioners remain proficient in their therapeutic area or practice setting. Within the 7-year period, candidates must have an active pharmacy license and pay an annual fee to maintain certification. To recertify during the 7th year, a candidate must remit a recertification fee, submit a completed application, and meet reexamination or continuing education requirements.⁴² The AQ designation in infectious diseases and cardiology can be reconfirmed by submitting a new professional portfolio reflecting the previous 7 years of practice within infectious diseases and cardiology.

Pharmacists who acquired initial certification from other professional organizations can also maintain certification by following the procedures outlined by the individual certifying organization.

Proposed Models for Continuing Competence

Despite existing continuing education requirements for maintaining pharmacy licensure and specialty certification, there are concerns regarding the quality and effectiveness of the current continuing education system as described earlier in the discussion on CPD. These criticisms are not limited to the pharmacy profession and have

been expressed by a spectrum of groups including the public, policy-makers, third-party payers, employers, and other health care professionals. The primary problem with the current system is the inability to ensure that individual health care professionals do in fact maintain competence to provide high-quality, safe health care to the public. Furthermore, there is little evidence that the current continuing education system ensures that individual licensed pharmacists maintain the knowledge and skills needed to provide direct patient care to patients within a specific therapeutic area or practice setting. Similarly, although the intent of periodic recertification in specialty practice areas is to ensure that board-certified practitioners remain proficient, in reality, recertification only assures the public that certified practitioners undergo periodic re-evaluation. In fact, candidates for recertification by the BPS are not necessarily required to maintain an active practice in the specialty for which they are seeking recertification.

The 2003 IOM report *Health Professions Education: A Bridge to Quality* recommends that the certifying bodies of all health professions require license and certificate holders to maintain competence and periodically demonstrate competence to deliver patient care in each of five defined areas: (i) providing patient-centered care, (ii) working in interprofessional teams, (iii) employing evidence-based practice, (iv) applying quality improvement strategies, and (v) using informatics.⁵⁶ The report recommends that demonstration of competency should occur through direct measures of technical competence, patient assessment, evaluation of patient outcomes, and other evidence-based assessment methods. The report also suggests that structured direct observations using standardized patients, peer assessments, and case- and essay-based questions could be a valid means of assessing practice competency.

Implementing these proposed methods could be associated with significant costs and encounter substantial barriers. For example, peer observation during the provision of direct patient care might be restricted by the HIPAA regulations and could interfere with the patient encounter. Other issues to be resolved included the frequency of reassessment and payment for the costs of recertification. For now, clinical pharmacists must individually pursue continuous professional development and maintain competency through existing systems. However, clinical pharmacists must also recognize the

limitations of the current systems and should participate in developing innovative, effective strategies for assessing competency within a myriad of therapeutic areas and practice settings.

Summary and Recommendations for Achieving, Demonstrating, and Maintaining Competence as a Clinical Pharmacist

All clinical pharmacists should complete the following steps:

- Meet all requirements for pharmacy licensure within the state or jurisdiction where the pharmacist intends to practice.
- Complete an accredited PGY1 pharmacy residency.
- For those desiring to practice in a specific therapeutic area or practice setting, complete an accredited PGY2 pharmacy residency in that specific therapeutic area or practice setting, if such a residency exists.
- For those desiring to conduct research as an independent investigator, complete a fellowship or graduate education in pharmaceutical sciences.
- Consider relevant traineeships and practice-based activities/certificate programs to enhance one's knowledge and skills to support professional development (e.g., teaching, leadership) throughout one's career.
- Obtain initial certification by the BPS or other appropriate sponsoring organizations or agencies in one's primary therapeutic area or practice setting, when such certification exists, within 2 years after accepting a position within a specific therapeutic area or practice setting.
- Maintain an active license as a pharmacist in the state or jurisdiction of employment by meeting the requirements to maintain licensure as outlined by the relevant board of pharmacy.
- Maintain certification within the primary therapeutic area or practice setting annually (or as required) and meet recertification requirements in that therapeutic area or practice setting as required by the BPS or other accredited certifying organizations or agencies.
- Maintain the skills and knowledge acquired during practice-based activities or certificate programs as outlined by the certifying organization(s).
- Work with the ACCP and other professional organizations to facilitate the development

and implementation of innovative strategies to assess core practice competencies, such as CPD.

Conclusions

This document provides recommendations for postgraduate education and training for graduates of accredited U.S. schools and colleges of pharmacy and describes preferred pathways for achieving, demonstrating, and maintaining competence as clinical pharmacists.

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