ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

ACCREDITATION STANDARDS AND KEY ELEMENTS FOR THE PROFESSIONAL PROGRAM IN PHARMACY LEADING TO THE DOCTOR OF PHARMACY DEGREE

("STANDARDS 2025")

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Accreditation Council for Pharmacy Education
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TABLE OF CONTENTS

PREAMBLE ..... **ii**

Standard 1: Organization and Governance 1
Standard 2: Curriculum 5
Standard 3: Experiential Learning 10
Standard 4: Students and Student Services 14
Standard 5: Faculty and Staff 18
Standard 6: Resources 21
Standard 7: Assessment 23

Appendix 1 26
Required Elements of the Didactic Doctor of Pharmacy Curriculum

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

STANDARDS 2025

PREAMBLE

Accreditation Council for Pharmacy Education (ACPE)

The Accreditation Council for Pharmacy Education (ACPE) is the national agency for the accreditation of professional degree programs in pharmacy and providers of continuing pharmacy education. ACPE (until 2003 known as the American Council on Pharmaceutical Education) was established in 1932 for the accreditation of professional degree programs in pharmacy, and in 1975 ACPE's scope was broadened to include accreditation of providers of continuing pharmacy education (www.acpe-accredit.org). ACPE expanded its activities to include evaluation and international-accreditation of professional degree programs internationally in 2011 and entered into a collaboration with the American Society of Health-System Pharmacists (ASHP) to accredit pharmacy technician education and training programs beginning in 2014.

The mission of ACPE is to assure and advance quality in pharmacy education. ACPE is an autonomous and independent agency whose Board of Directors consists of appointees from the American Association of Colleges of Pharmacy (AACP, academy/educators), the American Pharmacists Association (APhA, practitioners), the National Association of Boards of Pharmacy (NABP, regulators) (three appointments each), and a public member (one appointment by ACPE). Since the inception of its accreditation agency recognition program in 1952, the U.S. Department of Education (USDE) has continuously recognized ACPE as an accreditation agency. ACPE also gained recognition by the Council for Higher Education Accreditation (CHEA) in April 2004. State boards of pharmacy require that licensure applicants from the United States have graduated from an accredited pharmacy degree program to be eligible to sit for the North American Pharmacist Licensure Examination® (NAPLEX®).

Importance of Standards

To achieve and maintain ACPE accreditation, professional Doctor of Pharmacy (PharmD) degree programs (*hereafter described as 'programs'*) must meet the standards contained in this document. ACPE standards are minimum requirements, and it is expected that programs will exceed these required standards through initiatives designed to ensure continuous quality improvement. These standards describe the various elements needed for quality-assured professional pharmacy education and are based on evidence and experience. They articulate expectations that ACPE (as well as pharmacy practice and the pharmacy academy) has of academic institutions offering the Doctor of Pharmacy degree. ACPE standards also reflect the expectations that the U.S. Department of Education and state boards of pharmacy have of the colleges and schools, and of ACPE, regarding the quality of programs.

These standards have been developed with input from a broad range of constituents interested in and affected by pharmacy education. The standards focus on the educational outcomes required of PharmD programs, the assessment of those outcomes, and the structural and process-related elements within pharmacy education necessary to implement evidence-based outcome measures that document achievement of the standards. In addition, these standards describe areas where programs can experiment

and innovate within the didactic and experiential components of their curricula to meet the required educational outcomes. Establishing a commitment to continuing professional development (CPD) by students and graduates is also addressed, as are contemporary educational concepts such as student readiness to:

- Enter advanced pharmacy practice experiences (APPE-ready).
- Provide patient care in a variety of healthcare settings (Practice-ready).
- Contribute as a member of an interprofessional collaborative patient care team (Team-ready).

Revision of Standards: Background

All accrediting bodies, including ACPE, periodically review and revise their standards. A number of environmental factors prompted ACPE to conduct a careful reassessment of the standards. These factors included:

- The experience gained by ACPE in its accreditation reviews since the adoption of the Doctor of Pharmacy standards in 2016.

- Feedback from ACPE stakeholders regarding quality improvement of the standards.

- Expansion of the scope of pharmacy practice.

- The revision of the American Association of Colleges of Pharmacy's Curriculum Outcomes and Entrustable Professional Activities (COEPA), 2022, which are intended to be the target toward which the evolving pharmacy curriculum should be aimed.
  https://www.aacp.org/sites/default/files/2022-11/coepa-document-final.pdf

- The Joint Commission of Pharmacy Practitioners' (JCPP) *Vision of Pharmacy Practice*, accepted by the governing boards of 10 pharmacy organizations, including ACPE, and released in 2013.
  https://jcpp.net/wp-content/uploads/2016/03/PatientCareProcess-with-supporting-organizations.pdf

- The document *Pharmacists' Patient Care Process*, developed by a work group from 11 national pharmacy organizations to promote a consistent approach to the process of care. This document was first endorsed by the Joint Commission of Pharmacy Practitioners in 2014.
  https://jcpp.net/patient-care-process/

- Core Competencies for Interprofessional Collaborative Practice.
  https://www.ipecollaborative.org/assets/core-competencies/IPEC_Core_Competencies_Version_3_2023.pdf.

- Revised NAPLEX Competency Statements.
  https://nabp.pharmacy/programs/examinations/naplex/competency-statements-2021/

Revision of Standards: Process Employed

In January 2021, ACPE announced to its stakeholders (including pharmacy colleges and schools, professional pharmacy organizations, student pharmacist organizations, and other accrediting bodies) the

intent to revise the Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree. Written comments were solicited from stakeholders, and many were received. In addition, a web-based survey which allowed anonymous completion was distributed to all stakeholders. ACPE also held multiple stakeholder town halls to discuss issues facing pharmacy practice and education. The results of the town halls and written comments influenced the direction and content of these revised standards. The first draft of the revised standards was approved by the ACPE Board of Directors in January 2024 and distributed to ACPE stakeholders. Subsequently, a series of open hearings were conducted at national pharmacy meetings and town halls. Another web-based survey which allowed anonymous completion by stakeholders was conducted in 2024. The ACPE Board of Directors approved the revised standards at the **June 12–14, 2024,** meeting with an effective date of **July 1, 2025**. The new standards will be referred to as "Standards 2025." Programs being evaluated by ACPE beginning in the fall of 2025 must comply with the new standards.

Revision of Standards: What's Different?

- *Format* – The standards revision process yielded one document: ***Standards 2025.*** The *Standards 2025* document includes the seven standards and respective required (key) elements for each individual standard. A separate *Guidance* document was used with prior Standards to support programs' efforts to enhance quality. The *Guidance* document has been incorporated into the *Standards 2025* document for ease of use. ACPE expects programs to be in compliance with all elements outlined in the *Standards 2025* document to meet minimum standards for pharmacy education and improve the quality of their programs. In other words, the *Standards 2025* document contains required elements that all accredited programs must meet.

- *Philosophy and Emphasis* – Based on stakeholder feedback, the Standards have been refined to ensure that graduating students are "practice-ready" and "team-ready," that is, prepared to directly contribute to patient care working in collaboration with other healthcare providers. The revision has also placed greater emphasis on critical educational outcomes identified by COEPA and the assessment of the level of student achievement of these outcomes. The Standards focus on the (1) development of students' professional knowledge, skills, abilities, behaviors, and attitudes, including scientific foundation, knowledge application, and practice competencies; (2) the manner in which programs assess students' acquisition of knowledge and application of knowledge to practice; (3) mastery of skills and achievement of competencies; and (4) the importance of both curricular and co-curricular experiences in advancing the professional development of students. Throughout the revision process, ACPE has focused on addressing the environmental factors noted above in *Revision of Standards: Background.*

- *Importance of Assessment* – Based on feedback from the academy and other stakeholders, *the new Standards* emphasize assessment as a means of determining and improving the quality of pharmacy education. Having valid and reliable assessment mechanisms in place will provide additional insights to programs regarding their strengths and deficiencies. Programs are expected to use assessment outcome data to determine if the available resources are adequate and sufficient to allow for compliance with the Standards.

- *Organization of Standards* – Although, at a minimum, the Standards address the same critical areas as in previous versions, they have been restructured, simplified, and clarified. The Standards are organized and combined into seven standards. Standards and Key Elements are phrased as declarative statements describing the various attributes of an accredited program. Programs not

meeting the expectations and requirements outlined within these statements will be out of compliance with the Standard(s). One appendix is included within the Standards. Appendix 1 is a revision of the former Appendix 1 in *Standards 2016* and describes the required elements of the didactic component of the Doctor of Pharmacy curriculum. Appendix 2 of *Standards 2016* has been incorporated into *Standards 2025*.

- *Innovation* – Programs may choose avenues other than those suggested to achieve compliance with the Standards. In all cases, however, ACPE requires evidence that standards are being met.

- *Style* – The Chicago Manual of Style, 15th Edition, Chicago: The University of Chicago Press, 2003, was used in the preparation of the Standards.

Summary

ACPE looks forward to working with programs during the transition to *Standards 2025*. Through ACPE's strategic plan, the organization will be investigating opportunities for more standardized ways to evaluate the achievement of the Standards, including the identification of valid outcome measures to be monitored across all accredited programs. When needed, ACPE will be revising its policies and procedures to allow for greater standardization, consistency, efficiency, and effectiveness in its accreditation activities and evaluations. Feedback from ACPE stakeholders is always invited and valued.

ACPE Board of Directors and Staff
June 14, 2024

STANDARDS AND KEY ELEMENTS

Standard 1. Organization and Governance

The college or school is organized and staffed to advance its vision, mission, and strategic plan; meets all stated degree-granting eligibility and reporting requirements; and provides an environment and culture that promotes self-directed lifelong learning, professional behavior, and collaboration.

1.1. Eligibility and Reporting Requirements

1.1.a Autonomy – The academic unit offering the Doctor of Pharmacy degree is an autonomous unit organized as a college or school of pharmacy (within a university or as an independent entity). This includes autonomy to manage the program within stated policies and procedures, as well as applicable state and federal regulations.

1.1.b Legal empowerment – The college or school is legally empowered to offer and award the Doctor of Pharmacy degree.

1.1.c Administrative oversight – The college or school is led by a qualified dean, who serves as the chief administrative and academic officer of the college or school and is responsible for ensuring that all ACPE accreditation requirements are met.

1.1.d Institutional accreditation – The institution housing the college or school, or the independent college or school, has (or, in the case of new programs, is seeking and in good standing) full accreditation by an institutional accreditation agency recognized by the U.S. Department of Education.

1.1.e Institutional accreditation actions – The college or school reports to ACPE within 30 days any issue identified in institutional accreditation actions that may have a negative impact on the quality of the program and compliance with ACPE standards.

1.1.f Substantive change – The dean ensures prompt reporting of substantive changes as defined in the policies and procedures to ACPE for the purpose of evaluation of their impact on program quality.

1.2. College or School Vision and Mission

1.2.a College or school vision and mission – These statements are compatible with the vision and mission of the university in which the college or school operates.

1.2.b Education, research and scholarship, service, and practice – The statements address the college's or school's commitment to professional education, research and scholarship, professional and community service, pharmacy practice, and continuing professional development.

1.3. Strategic Plan

1.3.a Inclusive process – The strategic plan is developed through an inclusive process, including faculty, staff, students, preceptors, practitioners, and other relevant constituents, and is disseminated in summary form to key stakeholders.

1.3.b Appropriate resources – Elements within the strategic plan are appropriately resourced for implementation.

1.3.c Substantive change planning – Substantive programmatic changes contemplated by the college or school are linked to its ongoing strategic planning process.

1.4. Organization and Governance

1.4.a Qualified dean – The dean is qualified to provide leadership in pharmacy professional education and practice, research and scholarship, and professional and community service with adequate autonomy to lead the program. The dean demonstrates support for pharmacy education and the profession of pharmacy.

1.4.b Dean's other substantial administrative responsibilities – If the dean is assigned other substantial administrative responsibilities, the university ensures adequate resources to support the effective administration of the affairs of the college or school.

1.4.c Qualified administrative team – The dean and other college or school administrative leaders have credentials and experience that have prepared them for their respective roles and collectively have the needed backgrounds to effectively manage and support the program. The college or school has a process to solicit feedback on the performance and effectiveness of the dean and other administrative leaders from other administrators, faculty, and staff.

1.4.d **Authority, collegiality, and resources** – The college or school administration has defined lines of authority and responsibility, fosters organizational unit collegiality and effectiveness, and allocates resources appropriately.

1.4.e **Leadership collaboration** – University leadership and the college or school dean collaborate to advance the program's vision and mission and to meet ACPE accreditation standards. The dean directly reports to the university administrator(s) charged with oversight of the program.

1.4.f **College or school participation in university governance** – College or school administrators and faculty are effectively represented in the governance of the university, in accordance with its policies and procedures.

1.4.g **Faculty participation in college or school governance** – The college or school uses updated and published documents, such as bylaws, policies, and procedures, to ensure broad faculty participation in the governance of the college or school.

1.4.h **Contingency planning** – Comprehensive policies and procedures are in place to ensure the continued delivery of the program in response to significant disruption.

1.4.i **Alternate pathway equitability** – The college or school ensures that any alternative pathways to the Doctor of Pharmacy degree are equitably resourced and integrated into the college's or school's regular administrative structures, policies, and procedures, including planning, oversight, and evaluation.

1.5. **<u>Organizational Culture</u>**

1.5.a **Leadership and professionalism** – The college or school demonstrates a commitment to developing professionalism and fostering leadership in administrators, faculty, preceptors, staff, and students. Faculty and preceptors serve as mentors and positive role models for students. Faculty and administrators model professionalism through active and visible participation in professional organizations, meetings, events, and lifelong learning.

1.5.b **Behaviors** – The college or school has policies that define expected behaviors for administrators, faculty, preceptors, staff, and students, along with consequences for deviation from those behaviors.

1.5.c **Culture of collaboration** – The college or school develops and fosters a culture of collaboration within subunits of the college or school, as well as within and outside the university, to advance its vision, mission, and strategic plan, and to support the profession.

1.5.d **Culture of Diversity, Equity, Inclusion, and Belonging** – The college or school promotes the inclusion of diverse perspectives, lived experiences, and backgrounds, to create environments that support and enhance learning, teaching, research, and the delivery of patient care.

Standard 2. Curriculum

The program, incorporating the educational outcomes described below, imparts to the graduate the knowledge, skills, abilities, behaviors, and attitudes necessary for the contemporary practice of pharmacy in a healthcare environment that demands interprofessional collaboration and professional accountability for holistic patient well-being.

The curriculum is designed, delivered, and monitored by faculty to ensure breadth and depth of knowledge and skills, the maturation of professional attitudes and behaviors, and the opportunity to explore professional areas of interest. The curriculum provides a rigorous foundation in the biomedical, pharmaceutical, social/administrative/behavioral, and clinical sciences, while emphasizing active learning pedagogy, content integration, knowledge acquisition, skill development, and the application of knowledge and skills to therapeutic decision-making.

2.1 Educational Outcomes and Activities

Adapted from the American Association of Colleges of Pharmacy's Curriculum Outcomes and Entrustable Professional Activities (COEPA), 2022.

Knowledge

2.1.a Scientific thinking (Learner) – The graduate is able to seek, analyze, integrate, and apply foundational knowledge of medications and pharmacy practice (biomedical; pharmaceutical; social, behavioral, and administrative; and clinical sciences; drug classes; and digital health).

Skills

2.1.b Problem solving process (Problem-Solver) – The graduate is able to use problem solving and critical thinking skills, along with an innovative mindset, to address challenges and to promote positive change.

2.1.c Communication (Communicator) – The graduate is able to actively engage, listen, and communicate verbally, nonverbally, and in writing, when educating or interacting with an individual, group, or organization.

2.1.d **Cultural and structural humility (Ally)** – The graduate is able to mitigate health disparities by considering, recognizing, and navigating cultural and structural factors (e.g., social determinants of health, diversity, equity, inclusion, and accessibility) to improve access and health outcomes.

2.1.e **Person-centered care (Provider)** – The graduate is able to provide whole person care and comprehensive medication management to individuals as the medication specialist using the Pharmacists' Patient Care Process.

2.1.f **Advocacy (Advocate)** – The graduate is able to promote the best interests of patients and/or the pharmacy profession within healthcare settings and at the community, state, or national level.

2.1.g **Medication-use process stewardship (Steward)** – The graduate is able to optimize patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of medication use systems.

2.1.h **Interprofessional collaboration (Collaborator)** – The graduate is able to actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies.

2.1.i **Population health and wellness (Promoter)** – The graduate is able to assess factors that influence the health and wellness of a population and develop strategies to address those factors.

2.1.j **Leadership (Leader)** – The graduate is able to demonstrate the ability to influence and support the achievement of shared goals, regardless of one's role.

Attitudes

2.1.k **Self-awareness (Self-aware)** – The graduate is able to examine, reflect on, and address personal and professional attributes (e.g., knowledge, metacognition, skills, abilities, beliefs, biases, motivation, help-seeking strategies, and emotional intelligence) that could enhance or limit growth, development, and professional identity formation.

2.1.l **Professionalism (Professional)** – The graduate is able to exhibit attitudes and behaviors that embody a commitment to building and maintaining trust with patients, other health care providers, and society.

Professional Development Activities

2.1.m Entrustable professional activities – The program develops and assesses the achievement of professional activities a graduate can perform routinely designed to gain the trust of the healthcare team and the public.

2.1.n Professional skills and attitudes – Activities and experiences, intended to advance professional, personal, and career development, are purposely designed and implemented to ensure an array of opportunities for students to document competency of advocacy, self-awareness, leadership, and professionalism. These curricular and co-curricular activities complement and advance the learning that can occur outside, alongside, or within the curriculum.

2.2. Curriculum Design, Delivery, and Oversight

Curriculum Design

2.2.a Program duration – The Doctor of Pharmacy curriculum is a minimum of four academic years of full-time study or the equivalent.

2.2.b Care across the lifespan – The Pre-APPE curriculum provides foundational knowledge and skills that allow for care across the patient's lifespan.

2.2.c Curricular expectations – The Doctor of Pharmacy curriculum is organized to allow for the logical building of a sound scientific and clinical knowledge base, sequenced to promote integration and reinforcement of content and the demonstration of competency in skills required to achieve the educational outcomes, and inculcates professional attitudes and behaviors leading to personal and professional maturity consistent with the Oath of a Pharmacist.

2.2.d Content breadth and depth – A program documents, through mapping or other comparable methods, the breadth and depth of exposure to didactic curricular content areas deemed essential to pharmacy education at the doctoral level (see Appendix 1). Learning outcomes and activities for each APPE experience are mapped to the key elements 2.1.a-m, as well as to any additional competencies developed by the college or school.

2.2.e Electives – Time is reserved within the required curriculum for elective courses in both the didactic and APPE curriculums that permit exploration of and/or advanced study in areas of professional interest. Each student must complete both didactic and APPE electives.

2.2.f **Course syllabi** – Syllabi for didactic and experiential education courses, developed and updated through a faculty-approved process, contain information that supports curricular quality assurance assessment. Course syllabi minimum requirements include: (1) expected learning outcomes, (2) the methods by which achievement of those outcomes will be assessed, and (3) aspects of patient care (for clinical practice courses).

Curriculum Delivery

2.2.g **Teaching and learning methods** – The didactic curriculum is delivered via teaching/learning methods that address the diverse learning needs of students that: (1) facilitate achievement of learning outcomes, (2) actively engage learners, (3) promote student responsibility for self-directed, lifelong learning, (4) foster collaborative learning, (5) provide timely, formative performance feedback to students in both didactic and experiential education courses, and (6) are appropriate for the student population (i.e., campus-based vs. distance-based).

2.2.h **Academic integrity** – To ensure the credibility of the degree awarded, the validity of individual student assessments, and the integrity of student work, the college or school ensures that assignments and examinations take place under circumstances that minimize opportunities for academic misconduct. The college or school ensures the correct identity of all students (including distance students) completing proctored assessments.

Curriculum Oversight

2.2.i **Committee structure** – Curricular oversight involves collaboration between faculty and administration. The body/bodies charged with curricular oversight: (1) are representative of the faculty at large, (2) include student representation, and (3) are adequately resourced to ensure and continually advance curricular quality.

2.2.j **Committee functions** – The curriculum committee meets regularly and effectively communicates, coordinates, and documents efforts with the body/bodies responsible for curricular assessment in a systematic, ongoing process.

2.2.k **Student feedback** – Students are provided the opportunity to give formative and/or summative feedback to faculty, including preceptors, on their perceptions of teaching/learning effectiveness.

2.3. Interprofessional Education (IPE)

2.3.a Interprofessional team education – To advance collaboration and quality of patient care, the didactic and experiential curricula include opportunities for students to learn about, from, and with other members of the interprofessional healthcare team. Through interprofessional education activities, students gain an understanding of the abilities, competencies, and scope of practice of team members. Some, but not all, of these educational activities may be simulations or simulated experiences. IPE activities should be guided by the Interprofessional Education Collaborative (IPEC) competencies.

2.3.b Interprofessional team practice – All students participate as a healthcare team member in providing patient care and contributing to therapeutic decision-making. Students participate in both didactic and experiential educational activities with a variety of types of prescribers and their students as well as other professional healthcare team members and their students.

Standard 3. Experiential Learning

The curriculum incorporates Introductory Pharmacy Practice Experience (IPPE) and inculcates habits of self-directed, lifelong learning to prepare students for Advanced Pharmacy Practice Experience (APPE). APPEs integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum, co-curriculum, and extracurricular activities.

The college or school has a sufficient number of preceptors, who have professional credentials and expertise commensurate with their responsibilities to the program, to effectively deliver and evaluate students in the experiential component of the curriculum. The college or school has access to the appropriate number and mix of facilities in which IPPEs and APPEs are conducted to accommodate all students.

The college or school has adequate resources to assist sites in creating learning environments that are inclusive, welcoming, and support student learning and diverse student needs.

3.1. Introductory Pharmacy Practice Experience (IPPE) Curriculum

3.1.a IPPE expectations – IPPEs involve students in common contemporary U.S. practice models, including interprofessional practice involving shared patient care decision-making, professional ethics and expected behaviors, and patient care activities. IPPEs are structured and sequenced to intentionally develop in students a clear understanding of what constitutes exemplary pharmacy practice in the U.S. prior to beginning the APPE curriculum.

IPPE exemptions – Using an approved process of established criteria that encompass the depth and breadth of the practice, a college or school may exempt applicable students from the requirements of certain IPPE types provided that the college or school has documented that the student has achieved the desired outcomes of that experience through previous experience. Replacement IPPEs will then be used to advance students' understanding of practice and their preparation for success in APPEs.

3.1.b IPPE duration – IPPEs total no less than 300 clock hours of experience and are purposely integrated throughout the Pre-APPE curriculum. A minimum of 75 IPPE hours of patient care must be completed in both the community and the hospital/health system settings. The remaining 150 hours may be in a variety of pharmacy practice settings that expose students to patient care. Although simulation can provide an excellent learning modality in didactic education, simulated practice experiences cannot be counted toward the 300 IPPE hours.

3.2. Advanced Pharmacy Practice Experience (APPE) Curriculum

3.2.a **APPE expectations** – Collectively, APPEs emphasize continuity of care and incorporate acute, chronic, and wellness-promoting patient-care services in outpatient (community/ambulatory care) and inpatient (hospital/health system) settings. In the aggregate, APPEs expose students to diverse populations that include age; gender; neurodivergent, race/ethnicity, and socioeconomic factors; and disease states.

3.2.b **APPE duration** – The curriculum includes no less than 36 weeks (1440 hours) of APPEs, and each APPE is at minimum 160 hours. The majority of the APPE curriculum is focused on patient care.

3.2.c **Timing** – APPEs follow successful completion of all IPPE and required didactic curricular content. Required capstone courses or activities that provide opportunity for additional professional growth and insight are allowed during or after completion of APPEs. These activities do not compromise the quality of or decrease the time spent on the APPEs, nor count toward the required 1440 APPE hours.

3.2.d **Required APPE** – Required APPEs are completed in the United States or its territories or possessions and occur in four practice settings: (1) community pharmacy; (2) ambulatory care; (3) hospital/health system pharmacy; and (4) inpatient adult patient care. The majority of required APPEs must involve interprofessional communication and collaboration. Nontraditional Doctor of Pharmacy (NTPD) pathways need to demonstrate that all students have completed or met the four required APPEs using a formalized faculty assessment that documents achievement of the outcomes of the four required APPEs. All aspects of any program offering an NTPD pathway will be assessed in the self-study process and reviewed by onsite evaluation team members during the program's comprehensive evaluation.

3.2.e **Elective APPE** – Elective APPEs are structured to give students the opportunity to: (1) mature professionally, (2) secure the breadth and depth of experiences needed to achieve the educational outcomes and activities articulated in Standard 2.1.a-m, and (3) explore various sectors of practice. Of the 1440 hours required, a maximum of 320 hours of non-patient care elective APPEs are allowed.

3.3. Preceptors

3.3.a Preceptor criteria – The college or school makes available and applies quality criteria for preceptor recruitment, orientation, performance, and evaluation. The majority of preceptors for any given student are U.S. licensed pharmacists.

3.3.b Preceptor credentials/expertise – All experiential courses in the curriculum are taught by individuals with credentials and expertise that are explicitly linked to their precepting responsibilities.

3.3.c Preceptor education and development – Preceptors are oriented to the program's mission, the specific learning expectations for the experience outlined in the syllabus, and effective performance evaluation techniques before accepting students. The college or school fosters the professional development of its preceptors through a variety of learning tools and programs commensurate with their educational responsibilities to the program.

3.3.d Preceptor engagement – The college or school solicits the active involvement of preceptors in the continuous quality improvement of the Doctor of Pharmacy curriculum, especially the experiential component.

3.3.e Student-to-preceptor ratio – Student-to-precepting pharmacist ratios allow for the individualized mentoring and targeted professional development of learners. In most situations, student:preceptor ratios for IPPEs and for APPEs do not exceed 2:1.

3.4. Practice Facilities

3.4.a Quality criteria – The college or school employs quality criteria for practice facility recruitment and selection of a sufficient quantity that are appropriately licensed, as well as setting forth expectations and evaluation based on student opportunity to achieve the required educational outcomes.

3.5. Experiential Management

3.5.a Experiential education personnel – The experiential education component of the curriculum is led by a professional or professionals with knowledge and experience in pharmacy experiential learning. The experiential education curriculum is supported by an appropriate number of qualified faculty and staff.

3.5.b Affiliation agreements – The college or school secures and maintains fully executed agreements with the practice facilities it utilizes for the experiential component of the curriculum. At a minimum, each affiliation agreement ensures that all experiences are conducted in accordance with state and federal laws.

3.5.c Student remuneration/employment – Students do not receive payment for participating in curricular pharmacy practice experiences, nor are they placed in the specific practice area within a pharmacy practice site where they are currently employed. A Doctor of Pharmacy program in an institution that meets the definition of and has an institution-wide commitment to "cooperative education" (Cooperative Education and Internship Association; http://www.ceiainc.org) may apply to ACPE for a waiver of this requirement.

Standard 4. Students and Student Services

The college or school has an appropriately staffed and resourced organizational element dedicated to providing a comprehensive range of services that promote student success and well-being.

The college or school develops, implements, and assesses its policies and procedures to promote student success, resilience, and well-being; ensures the selection of a qualified and diverse student body into the program; and supports student progression through the Doctor of Pharmacy curriculum.

4.1. Student Services

4.1.a Student record management – The college or school has an ordered, accurate, and secure system of student records in compliance with the Family Educational Rights and Privacy Act (FERPA). Student services personnel and faculty are knowledgeable regarding FERPA law and its practices.

4.1.b Financial aid – The college or school provides students with financial aid information and guidance by appropriately trained personnel.

4.1.c Nondiscrimination – The college or school establishes and implements policies that ensure nondiscrimination as defined by state and federal laws and regulations.

4.1.d Disability accommodation – The college or school provides accommodations to students with documented disabilities that are determined by the University Disability Office (or equivalent) to be reasonable and do not violate the professional and technical standards or prevent students from meeting the educational outcomes of the program and provides support to faculty in accommodating students with documented disabilities.

4.1.e Healthcare – The college or school ensures students have access to adequate and readily accessible physical and mental health services. Appropriate immunization standards are established, along with the means to ensure that such standards are satisfied.

4.1.f Wellness and well-being – The college or school offers students access to wellness and resilience programs/services.

4.1.g Advising and mentorship – The college or school provides academic advising, mentorship, curricular and career-pathway counseling, and information on post-graduate education, credentialing, and training opportunities adequate to meet the needs of its students.

4.1.h **Student services access** – The college or school ensures that all students have equitable access to a comparable system of individualized student services (e.g., tutorial support, counseling, etc.) regardless of pathway.

4.2. Academic Environment

4.2.a **Student information** – The college or school produces and makes available to enrolled and prospective students updated information of importance, such as: governance documents, policies and procedures, professional and technical standards, academic calendars, handbooks, catalogs, curricular and pathway information, and other resources appropriate to the student experience.

4.2.b **Complaints policy** – The college or school develops, implements, and makes available to students a complaints policy that includes procedures for how students may file complaints within the college or school and also directly to ACPE regarding their college's or school's adherence to ACPE standards. The college or school maintains a chronological record of such student complaints, including how each complaint was resolved.

4.2.c **Student misconduct** – The college or school develops and implements policies regarding academic and non-academic misconduct of students that clearly outline the rights and responsibilities of, and ensures due process for, all parties involved.

4.2.d **Student representation** – The college or school considers student perspectives and includes student representation, where appropriate, on committees, in policy-development bodies, and in assessment and evaluation activities.

4.2.e **Distance learning policies** – For colleges and schools offering distance learning opportunities, admissions information clearly explains the conditions and requirements related to distance learning, including an estimated cost of attendance and full disclosure of any requirements that cannot be completed at a distance.

4.3. Admissions

4.3.a **Enrollment management** – Student enrollment is managed by college or school administration. Enrollments are in alignment with available physical, educational, financial, faculty, staff, practice site, preceptor, and administrative resources.

4.3.b Admission procedures – A duly constituted committee of the college or school has the responsibility and authority for the selection of students to be offered admission. Admission criteria, policies, and procedures are not compromised regardless of the size or quality of the applicant pool. All admission policies including early assurance and transfer should be detailed and readily available.

4.3.c Program description and quality indicators – The college or school produces and makes available to the public, including prospective students: (1) a complete and accurate description of the Doctor of Pharmacy program requirements (preprofessional and professional); (2) the program's current accreditation status; and (3) ACPE-required program performance information as defined in the ACPE Policies and Procedures manual.

4.3.d Admission criteria – The college or school sets performance expectations for criteria (such as admission tests, grade point averages, evaluations, and interviews) used in selecting students who have the potential for success in the program and the profession. Applicant performance on admission criteria is documented; and the related records are maintained by the college or school as per program/university requirements.

4.3.e Non-Traditional (Post-Baccalaureate) Doctor of Pharmacy pathway – Admission to a nontraditional (Post-Baccalaureate) Doctor of Pharmacy pathway must be limited to either: (1) pharmacists awarded a Baccalaureate degree from a program accredited by ACPE or the Canadian Council for Accreditation of Pharmacy Programs (CCAPP) and holding a valid license to practice pharmacy in the U.S. or Canada; or (2) pharmacists awarded a pharmacy degree from a non-U.S. or non-Canadian program and holding a valid license to practice pharmacy in a U.S. jurisdiction. Advanced standing does not negate the requirements of pharmacy practice experiences.

4.3.f Admission materials – The college or school produces and makes available to prospective students the criteria, policies, and procedures for admission to the program. All admission materials clearly state academic expectations, required communication skills, types of personal history disclosures that may be required, and professional and technical standards for graduation.

4.3.g Written and oral communication assessment – Written and oral communication skills are assessed in a standardized manner as part of the admission process.

4.3.h Candidate interviews – Standardized, synchronous interviews (in-person, telephonic, and/or computer-facilitated) of applicants are conducted as a part of the admission process to assess affective domain characteristics. The interview process must allow for each individual candidate to be interviewed separately from other applicants. Interviewers receive training in the method that the college or school has chosen for standardization of the interview process.

4.3.i Transfer and waiver policies – A college or school establishes and implements policies and procedures for students who request to transfer credits into the program. Such policies and procedures are based on defensible and documented assessments of course equivalency. No more than the equivalent of one year of didactic credit shall be given to any student applying for advanced standing from any institution other than an ACPE accredited college/school of pharmacy.

A college or school offering multiple pathways to a Doctor of Pharmacy degree has policies and procedures for students who wish to change from one pathway to another.

4.4. Progression

4.4.a Progression policies – The college or school creates, makes available to students and prospective students, and abides by criteria, policies, and procedures related to:

- Academic progression including probation and remediation
- Appeal mechanisms (including grade appeals)
- Dismissals for academic and non-academic reasons
- Leaves of absence
- Missed course work or credit
- Readmission
- Rights to due process
- Suspension
- Withdrawals

4.4.b Early intervention – The college or school's system of monitoring student performance provides for early detection of academic and behavioral issues. The college or school develops and implements interventions that have the potential for successful resolution of the identified issues.

Standard 5. Faculty and Staff

The college or school has a cohort of faculty and staff with the qualifications and experience needed to effectively deliver and evaluate the program.

5.1. Faculty and Staff—Quantitative Factors

5.1.a Sufficient faculty – The college or school has a sufficient number of core faculty members to effectively address the following programmatic needs that include:

- Teaching (didactic and experiential)
- Professional development
- Research and other scholarly activities
- Assessment activities
- Service - college/school, institutional, professional, and community
- Interprofessional collaboration
- Student advising and career counseling
- Faculty mentoring
- Pharmacy practice
- Responsibilities in other degrees (if applicable)
- Support of distance students and campus(es) (if applicable)

Student-to-faculty (FTEs) ratios should provide students with the individualized attention needed to advance deep learning and foster professional development. The student-to-faculty ratio must be sufficient to allow faculty to effectively deliver the program with required expertise to address curricular content and fulfill service and scholarship duties required of faculty. In most situations, student:faculty ratio should not exceed 10:1.

Newly hired faculty members should have adequate time to onboard to full faculty duties.

5.1.b Sufficient staff – The college or school has a sufficient number of staff to effectively address the following programmatic needs that include:

- Student and academic affairs-related services, including recruitment and admission
- Experiential education
- Assessment activities
- Research administration
- Laboratory maintenance
- Information technology infrastructure
- Pedagogical and educational technology support
- Teaching assistance
- General faculty and administration clerical support
- Support of distance students and campus(es) (if applicable)

5.2. Faculty and Staff—Qualitative Factors

5.2.a Academic credentials – Faculty members, including adjunct and volunteer faculty members, have academic and professional credentials and expertise commensurate with their responsibilities within the program. Faculty members typically hold earned doctoral degrees.

5.2.b Professional credentials – Staff members have professional credentials and expertise commensurate with their roles and responsibilities to the program.

5.2.c Educational effectiveness – Faculty members have the capability and demonstrate a continuous commitment to be effective educators and are able to effectively use contemporary educational techniques to promote student learning in all offered pathways.

5.2.d Scholarly engagement – The college or school creates an environment that both requires and promotes research and scholarship, collaboration, and develops mechanisms to assess both the quantity and quality of faculty scholarly activities.

5.2.e Service commitment – In the aggregate, faculty and staff engage in college or school, institutional, professional, and community service that advances the program and the profession of pharmacy.

5.2.f Practice understanding – Faculty members, regardless of their discipline, have a conceptual understanding of and commitment to advancing current and proposed future pharmacy practice.

5.2.g Faculty/staff development – The college or school provides opportunities for career and professional development of its faculty and staff, individually and collectively, to enhance their role-related skills, scholarly productivity, and leadership. Faculty members, instructors, and teaching assistants involved in distance education have been provided training and skill development to manage, mentor, teach, engage, and evaluate students enrolled in distance learning courses or activities.

5.2.h Faculty/staff wellness and well-being – Faculty and staff have access to wellness and resilience programs, including resources, peer support, and training to improve their ability to successfully manage and balance work related challenges as well as creating a sense of belonging.

5.2.i **Policy application** – The college or school ensures that policies and procedures for faculty and staff recruitment, performance review, promotion, tenure (if applicable), and retention are in place and applied in a consistent manner.

Standard 6. Resources

The college or school has adequate and appropriately equipped physical and educational facilities to achieve its mission and goals.

The college or school has current and anticipated financial resources to deliver the program and accomplish its mission and strategic plan.

6.1. Physical Facilities and Educational Resources

6.1.a Physical facilities – The college or school physical facilities (or the access to other facilities) meet legal and safety standards, utilize current educational technology, and are clean and well maintained.

Colleges and schools provide students, faculty members, preceptors, instructors, and teaching assistants access to appropriate resources to support their contribution to the mission. Organized instruction is provided to these individuals in the effective and efficient use of the library and educational resources.

6.1.b Physical facilities' attributes – The college or school has access to physical facilities that provide adequate:

- Classrooms that comfortably accommodate the student body and that are equipped with technological capabilities needed to effectively deliver the curriculum.
- Laboratories suitable for compounding; demonstration; and skill and competency evaluation.
- Faculty office space with sufficient privacy to permit accomplishment of responsibilities.
- Space that facilitates interaction of administrators, faculty, students, and interprofessional collaborators.
- Access to educational simulation capabilities.
- Faculty research laboratories with well-maintained equipment.
- Animal facilities that meet care regulations (if applicable).
- Individual and group student study space and student meeting facilities.

Branch or distance campuses have access to physical facilities of comparable quality and functionality as those found on the main campus.

6.1.c **Educational resource access** – The college or school makes available technological and librarian access, current scientific and medical literature, and other academic and educational resources, to students in all pathways, faculty, staff, and preceptors (as needed). For distance course delivery, the college or school has sufficient resources to effectively support teaching and learning including appropriate laboratory space, for distance pathway students.

6.2. **Financial Resources**

6.2.a **Budgetary input** – The college or school provides input into the development and operation of a budget that is planned, executed, and managed in accordance with sound and accepted business practices.

6.2.b **Revenue allocation** – Sufficient funds are allocated to adequately deliver the program.

6.2.c **Equitable allocation** – The college or school has sufficient funds to maintain equitable facilities (commensurate with services and activities) across all program pathways.

6.2.d **Budget adequacy** – The college or school ensures that sufficient resources are matched to student enrollment and allocated for overall program needs.

Standard 7. Assessment

The college or school develops, resources, and implements a plan to assess achievement of its mission, strategic plan, and attainment of educational outcomes to ensure that graduates are prepared to enter practice. Assessment data should be used for continuous quality improvement of the program.

7.1. Assessment Plan

7.1.a Assessment plan expectations – The college or school must develop and implement a written assessment plan that assesses the key elements of Standard 7. The college or school must use the analysis of process and outcome measures for continuous development and improvement of the program.

7.2. Assessment Elements for Organization and Governance

7.2.a Organizational effectiveness – The college or school assessment plan is designed to provide insight into the effectiveness of the organizational structure in engaging and uniting constituents and positioning the college or school for success through purposeful planning.

7.2.b Strategic plan – The college or school assessment plan is designed to monitor and assess the effectiveness of the strategic plan.

7.2.c Organizational culture – The college or school assesses the culture of the program. Contributing factors such as collaboration; diversity, equity, inclusion, and belonging; leadership; and professionalism should be considered.

7.2.d Program evaluation by stakeholders – The assessment plan includes the use of data from AACP standardized surveys of graduating students, faculty, and preceptors.

7.3. Assessment Elements for Educational Outcomes, Curriculum, and Experiential Learning

7.3.a Variety of assessment approaches - The assessment plan incorporates (1) systematic, valid, and reliable knowledge-based and performance-based formative and summative assessments; and (2) standardized assessments, as required by ACPE (e.g., licensing examinations), that allow for national comparisons and college- or school-determined peer comparisons.

7.3.b Curriculum assessment and continuous improvement – The college or school systematically assesses its curricular structure, content, organization, and outcomes to ensure optimal achievement of educational outcomes with reasonable student workload expectations. The college or school documents the use of assessment data for continuous improvement of the curriculum and its delivery.

7.3.c Experiential quality assurance – The college or school develops and implements a quality assurance procedure for all pharmacy practice experiences that is established and implemented to: (1) facilitate achievement of stated course expectations, (2) standardize key components of experiences across all sites offering the same experiential course, and (3) promote consistent assessment of student performance.

7.3.d Student achievement and readiness – The assessment plan measures student achievement at defined levels of the professional outcomes that support attainment of 2.1a-n, in aggregate and at the individual student level. Evidence should be provided to show that students are APPE-ready, and graduates are Practice-ready and Team-ready. Data are used to improve student achievement.

7.3.e Pathway comparability – The assessment plan includes a variety of assessments that will allow comparison and establishment of educational parity of all alternative program pathways to degree completion, including geographically dispersed campuses and distance learning-based pathways.

7.4. <u>Assessment Elements for Student Services, Faculty and Staff, and Resources</u>

7.4.a Student services assessment – The college or school assesses the quality and quantity of student services to address the programmatic needs for healthcare, wellness, advising, and academic support in line with key elements 4.1e to 4.1.h.

7.4.b Admission criteria – The college or school regularly assesses the criteria, policies, and procedures to ensure the selection of a qualified and diverse student body, members of which have the potential for academic success and the ability to practice in team-centered and culturally diverse environments.

7.4.c Student progression – The college or school regularly assesses student retention and attrition data, criteria, policies, and procedures to identify and analyze trends and to make programmatic adjustments to optimize student progression as established in the annual monitoring policies documented in the ACPE Policies and Procedures manual.

7.4.d **Faculty and staff workload** – The college or school regularly assesses faculty and staff workload to effectively address the programmatic needs of key elements 5.1 and 5.2.

7.4.e **Faculty productivity** – The college or school systematically assesses the productivity of its faculty in scholarship, teaching, and service.

7.4.f **Preceptor capacity** – The college or school systematically assesses the preceptor quality and quantity needed based on enrollment.

7.4.g **Physical and financial resources** – The college or school evaluates the physical facilities and financial resources based on programmatic needs.

7.5. **Continuous Quality Improvement**

7.5.a **Quality improvements** – The college or school utilizes stakeholder feedback and assessment data to make changes to the program and improve the educational outcomes and programmatic processes.

The college or school makes available to key stakeholders, at least annually, the major findings and actions resulting from its assessment plan.

7.5.b **Continuous compliance with the accreditation standards** – The college or school has in place processes and procedures for reviewing and ensuring its program meets all accreditation standards and if applicable, all requested reporting, during the awarded accreditation term.

Appendix 1
Required Elements of the Didactic Doctor of Pharmacy Curriculum

The following didactic content areas and associated learning expectations are viewed as central to a contemporary, high-quality Doctor of Pharmacy education and are incorporated at an appropriate breadth and depth in the required didactic Doctor of Pharmacy curriculum. Where noted, content areas may be addressed in the pre-professional curriculum (i.e., as requirements for admission). Required content areas may be delivered within individual or integrated courses and may involve multiple disciplines and professions.

This appendix was purposely written at the level of broad learning outcomes. It was constructed to provide statements of concepts and understandings essential for pharmacists to master. The goal is to ensure that critical areas of learning are included in the curricula of all programs without dictating how the lessons are structured, organized, or delivered.

The clear expectation embedded within Appendix 1 is that students will develop the comprehensive knowledge base required to be 'APPE-ready' and that they will be able to retain, recall, build upon, and apply that knowledge to deliver quality patient care in a variety of entry-level practice settings.

NOTE: The topics under each Science category are organized in alphabetical order.

Biomedical Sciences (may be addressed in the pre-professional curriculum)

Biochemistry

- Structure, properties, biological functions, applicable kinetics, and metabolic fate of macromolecules essential to life (proteins, lipids, carbohydrates, and nucleic acids). Application of these concepts to identify endogenous targets for drug therapy and rational drug design strategies.

Biostatistics

- Appropriate use of commonly employed statistical tests, management of data sets, and the evaluation of the validity of conclusions generated based on the application of those tests to the data sets.

Human Anatomy

- Structure of major human body systems at the cellular, tissue, organ, and system level.

Human Physiology

- Homeostatic function and normal response reactions across the lifespan of non-diseased human cells, organs, and systems.

Immunology

- Human immune system components, innate and adaptive immune responses to infection, injury and disease, and augmentation of the human immune system to prevent disease.

Medical Microbiology

- Structure, function, and properties of microorganisms (bacteria, viruses, parasites, and fungi) responsible for human disease, and rational approaches to their containment or eradication.

Pathology/Pathophysiology

- Basic principles, mechanisms, functional changes and metabolic sequelae of human disease impacting cells, organs, and systems.

Pharmaceutical Sciences

Extemporaneous Compounding

- Preparation of sterile and non-sterile prescriptions which are pharmaceutically accurate regarding drug product and dose, free from contamination, and appropriately formulated for safe and effective patient use. Analysis of the scientific principles and quality standards upon which these compounding requirements are based.

Medicinal Chemistry

- Chemical basis of drug action and behavior in vivo and in vitro, with an emphasis on pharmacophore recognition and the application of physicochemical properties, structure-activity relationships, intermolecular drug-receptor interactions and metabolism to therapeutic decision-making.

Pharmaceutical Calculations

- Mastery of mathematical skills required to accurately prepare prescriptions (including extemporaneously compounded dosage forms) that are therapeutically sound and safe for patient use. Calculation of patient-specific nutritional and drug dosing/delivery requirements.

Pharmaceutics/Biopharmaceutics

- Physicochemical properties of drugs, excipients, and dosage forms important to the rational design and manufacture of sterile and non-sterile products. Application of physical chemistry and dosage form science to drug stability, delivery, release, disposition, pharmacokinetics, therapeutic effectiveness, and the development of quality standards for drug products.

Pharmacogenomics/genetics

- Genetic basis for disease and individual differences in metabolizing enzymes, transporters, and other biochemicals impacting drug disposition and action that underpin the practice of personalized medicine.

Pharmacokinetics

- Mathematical determination of the rate of drug movement from one therapeutic or physiologic compartment to another. Application of physicochemical and kinetic principles and parameters to therapeutically important issues, such as drug delivery, disposition, therapeutic effectiveness, and beneficial or adverse interactions in general and specific populations.

Pharmacology

- Pharmacodynamics, mechanisms of therapeutic and adverse drug actions and interactions, lifespan-dependent variations in physiology or biochemistry that impact drug action and effectiveness, and application of these principles to therapeutic decision-making.

Toxicology

- Pharmacodynamics, mechanisms, prevention, and treatment of the toxic effects of drugs and poisons, including poisons associated with bioterrorism.

Social/Administrative/Behavioral Sciences

Cultural Awareness

- Exploration of the potential impact of cultural values, beliefs, and practices on patient and population outcomes. Cultural practices commonly selected by practitioners and/or patients for use in the promotion of health and wellness, and their potential impact on pharmacotherapy.

Ethics

- Exploration of approaches for resolving ethical dilemmas in patient care and its delivery, with an emphasis on moral responsibility and the ability to critically evaluate viable options against the needs of patients and other key stakeholders.

Healthcare Systems

- Examination of U.S. health systems and contemporary reimbursement models in which patient-centered and/or population-based care is provided and paid for, and how social, political, economic, organizational, and cultural factors influence providers' ability to ensure patient safety and deliver coordinated interprofessional care services.

History of Pharmacy

- Exploration of the evolution of pharmacy as a distinct profession, the transition from a focus on the drug to a focus on the patient and the therapy (including pharmacist-provided patient care), and major milestones and contributors in the evolution of pharmacy.

Pharmacoeconomics

- Application of economic principles and theories to the provision of cost-effective pharmacy therapies and services that optimize patient-care outcomes, particularly in situations where healthcare resources are limited.

Pharmacoepidemiology

- Cause-and-effect patterns of health and disease in large populations that advance safe and effective drug use as well as non-drug therapies and positive care outcomes within those populations.

Pharmacy Law and Regulatory Affairs

- Federal and appropriate state-specific statutes, regulations, policies, executive orders, and court decisions that regulate the practice of pharmacy, including the mitigation of drug misuse (e.g., prescription, illicit, non-prescription) and diversion.

Practice Management

- Application of sound management and leadership principles (including operations, information, resources, fiscal, and personnel including pharmacy technicians and interns) and quality metrics to advance patient care and service delivery within and between various practice settings.

Professional Communication

- Analysis and practice of verbal, non-verbal, and written communication strategies that promote effective interpersonal dialog and understanding to advance specific patient care, education, advocacy, and/or interprofessional collaboration goals. Exploration of technology-based communication tools and their impact on healthcare delivery, healthcare access, healthcare information, and patient empowerment.

Professional Development

- Development of professional self-awareness, capabilities, responsibilities, and leadership.

Research Design

- Evaluation of research methods and protocol design required to conduct valid and reliable studies to test hypotheses or answer research questions, and to appropriately interpret/apply the validity and reliability of the conclusions of published research studies.

Social and Behavioral Aspects of Practice

- Understanding of or experience with contemporary practice roles and innovative opportunities, and inculcation of professional attitudes, behaviors, and dispositions.

Clinical Sciences

Clinical Laboratory Data

- Application of clinical laboratory data to disease state management, including screening, diagnosis, progression, and treatment evaluation.

Clinical Pharmacokinetics

- Application of basic pharmacokinetic principles and mathematical models to calculate safe and effective doses of drugs for individual patients and adjust therapy as appropriate through the monitoring of drug concentration.

Health Informatics

- Effective and secure design and use of electronic and other technology-based systems, including electronic health records, to capture, store, retrieve, and analyze data for use in patient care, and confidentially and legally share health information in accordance with federal policies.

Health Information Retrieval and Evaluation

- Critical analysis and application of relevant health sciences literature and other information resources to answer specific patient care and/or drug-related questions and provide evidence-based therapeutic recommendations to healthcare providers or, when appropriate, the public.

Medication Prescribing, Preparation, Distribution, Dispensing, and Administration

- Prescribing, preparing, distributing, dispensing, and administering medications including, but not limited to: injectable medications, identification and prevention of medication errors and interactions, maintaining and using patient profile systems, prescription processing technology and/or equipment including oversight of support personnel, and ensuring patient safety. Educating about appropriate medication use and administration for various disease states including substance use disorder. All students must receive training in immunizations.

Pharmacognosy and Alternative and Complementary Therapies

- Evidence-based evaluation of the therapeutic value, safety, and regulation of pharmacologically active natural products and dietary supplements.

Patient Assessment

- Evaluation of patient function and dysfunction through the performance of tests and assessments leading to objective (e.g., physical assessment, health screening, and lab data interpretation) and subjective (patient interview) data important to the diagnosis and provision of care.

Patient Safety

- Analysis of the systems- and human-associated causes of medication errors, exploration of strategies designed to reduce/eliminate them, and interpretation and application of available and evolving error-reporting mechanisms.

Pharmacotherapy

- Evidence-based clinical decision making, therapeutic treatment planning (including diagnosing and prescribing), and medication therapy management strategy development for patients with specific diseases and conditions that complicate care and/or put patients at high risk for adverse events. Emphasis on patient safety, clinical efficacy, pharmacogenomic and pharmacoeconomic considerations, and treatment of patients across the lifespan.

Public Health

- Exploration of population health management strategies, national and community-based public health programs, and implementation of activities that advance public health and wellness.

Self-Care Pharmacotherapy

- Therapeutic needs assessment, including the need for triage to other health professionals, drug product recommendation/selection, diagnosis, prescribing, and counseling of patients on non-prescription drug products, non-pharmacologic treatments and health and wellness strategies including nutraceuticals.

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

ACCREDITATION STANDARDS AND KEY ELEMENTS FOR THE PROFESSIONAL PROGRAM IN PHARMACY LEADING TO THE DOCTOR OF PHARMACY DEGREE

("STANDARDS 2016")

APPROVED January 25, 2015

RELEASED February 2, 2015

Accreditation Council for Pharmacy Education
Chicago, Illinois

TABLE OF CONTENTS

PREAMBLE.....iii

SECTION I: EDUCATIONAL OUTCOMES 1
Standard 1: Foundational Knowledge.....1
Standard 2: Essentials for Practice and Care 1
Standard 3: Approach to Practice and Care 2
Standard 4: Personal and Professional Development.....2

SECTION II: STRUCTURE AND PROCESS TO PROMOTE ACHIEVEMENT OF EDUCATIONAL OUTCOMES.....3
Standard 5: Eligibility and Reporting Requirements.....3
Standard 6: College or School Vision, Mission, and Goals 3
Standard 7: Strategic Plan.....4
Standard 8: Organization and Governance.....4
Standard 9: Organizational Culture 5
Standard10: Curriculum Design, Delivery, and Oversight.....5
Standard 11: Interprofessional Education (IPE).....7
Standard 12: Pre-Advanced Pharmacy Practice Experience (Pre-APPE) Curriculum 8
Standard 13: Advanced Pharmacy Practice Experience (APPE) Curriculum....9
Standard 14: Student Services.....10
Standard 15: Academic Environment 10
Standard 16: Admissions.....11
Standard 17: Progression.....12
Standard 18: Faculty and Staff - Quantitative Factors 13
Standard 19: Faculty and Staff - Qualitative Factors.....13
Standard 20: Preceptors.....14
Standard 21: Physical Facilities and Educational Resources.....15
Standard 22: Practice Facilities 15
Standard 23: Financial Resources.....16

SECTION III: ASSESSMENT OF STANDARDS AND KEY ELEMENTS 17
Standard 24: Assessment Elements for Section I: Educational Outcomes 17
Standard 25: Assessment Elements for Section II: Structure and Process 17

Appendix 1 19
Required Elements of the Didactic Doctor of Pharmacy Curriculum

Appendix 2 24
Expectations within the APPE Curriculum

Appendix 3 26
Required Documentation for Standards and Key Elements 2016

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

STANDARDS 2016

PREAMBLE

Accreditation Council for Pharmacy Education (ACPE)

The Accreditation Council for Pharmacy Education (ACPE) is the national agency for the accreditation of professional degree programs in pharmacy and providers of continuing pharmacy education. ACPE (until 2003 known as the American Council on Pharmaceutical Education) was established in 1932 for the accreditation of professional degree programs in pharmacy, and in 1975 its scope was broadened to include accreditation of providers of continuing pharmacy education (www.acpe-accredit.org). ACPE expanded its activities to include evaluation and certification of professional degree programs internationally in 2011 and entered into a collaboration with the American Society of Health-System Pharmacists (ASHP) to accredit pharmacy technician education and training programs beginning in 2014. The mission of ACPE is to assure and advance quality in pharmacy education. ACPE is an autonomous and independent agency whose Board of Directors is appointed by the American Association of Colleges of Pharmacy (AACP), the American Pharmacists Association (APhA), the National Association of Boards of Pharmacy (NABP) (three appointments each), and the American Council on Education (ACE) (one appointment). Since the inception of its accreditation agency recognition program in 1952, the U.S. Department of Education (USDE) has continuously recognized ACPE. ACPE also gained recognition by the Council for Higher Education Accreditation (CHEA) in April 2004. State boards of pharmacy require that licensure applicants from the United States have graduated from an accredited pharmacy degree program to be eligible to sit for the North American Pharmacist Licensure Examination™ (NAPLEX®).

Importance of Standards

To achieve and maintain ACPE accreditation, professional Doctor of Pharmacy (PharmD) degree programs (hereafter described as 'programs') must meet the standards contained in this document. ACPE standards are minimum requirements, and it is expected that programs will exceed these required standards through initiatives designed to ensure continuous quality improvement. These standards describe the various elements needed for quality-assured professional education and are based on evidence and experience. They articulate expectations that ACPE (as well as pharmacy practice and the pharmacy academy) has of academic institutions offering the PharmD degree. ACPE standards also reflect the expectations that the U.S. Department of Education and state boards of pharmacy have of the colleges and schools, and of ACPE, regarding the quality of professional degree programs.

These standards have been developed with input from a broad range of constituents interested in and affected by pharmacy education. They focus on the educational outcomes required of PharmD programs and the assessment of those outcomes. They also address the structural and process-related elements within pharmacy education necessary to implement evidence-based outcome measures that document achievement of the standards. In addition, these standards describe areas where programs can experiment and innovate within the didactic and experiential components of their curricula to meet the required Educational Outcomes (Standards 1–4). Establishing a commitment to continuing professional development (CPD) by

students and graduates is also addressed, as are contemporary educational concepts such student readiness to:

- Enter advanced pharmacy practice experiences (APPE-ready)
- Provide direct patient care in a variety of healthcare settings (Practice-ready)
- Contribute as a member of an interprofessional collaborative patient care team (Team-ready)

Revision of Standards: Background

All accrediting bodies, including ACPE, periodically review and revise their standards. A number of environmental factors prompted ACPE to conduct a careful reassessment of the standards. These factors included:

- The experience gained by ACPE in its accreditation reviews since the adoption of the Doctor of Pharmacy standards in 2007

- Feedback from ACPE stakeholders regarding quality improvement of the standards

- The reports of the Institute of Medicine (IOM) (www.iom.edu) noting needed changes in our healthcare system to improve medication safety and patient outcomes, including the five competencies that all healthcare professionals should attain during their education:

    - Provide patient-centered care
    - Work in interprofessional teams
    - Employ evidence-based practice
    - Apply quality improvement
    - Utilize informatics

- Expansion of the scope of pharmacy practice in state laws and regulations to include collaborative practice with prescribers

- The revision of the AACP's Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes in 2013, which are intended to be the target toward which the evolving pharmacy curriculum should be aimed
http://www.aacp.org/resources/education/cape/Pages/default.aspx

- The Joint Commission of Pharmacy Practitioners' (JCPP) *Vision of Pharmacy Practice*, accepted by the governing boards of 10 pharmacy organizations, including ACPE, and released in 2013
http://www.amcp.org/Tertiary.aspx?id=8463

- The document *Pharmacists' Patient Care Process*, developed by a work group from 11 national pharmacy organizations to promote a consistent approach to the process of care. This document was endorsed by the Joint Commission of Pharmacy Practitioners in 2014.
http://www.pharmacist.com/sites/default/files/JCPP_Pharmacists_Patient_Care_Process.pdf

- Health Professionals for a New Century: Transforming education to strengthen health systems in an interdependent world
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(10)61854-5/fulltext

- Core Competencies for Interprofessional Collaborative Practice
  http://www.aacn.nche.edu/education-resources/ipecreport.pdf

- Revised NAPLEX Competency Statements
  http://www.nabp.net/programs/examination/naplex/naplex-blueprint

Revision of Standards: Process Employed

In January 2012, ACPE announced to its stakeholders (including pharmacy colleges and schools, professional pharmacy organizations, student pharmacist organizations, and other accrediting bodies) its intent to revise the Doctor of Pharmacy degree standards. Written comments were solicited from stakeholders, and many were received. In addition, a Web-based survey that allowed anonymous completion was distributed to all the college or school of pharmacy deans. ACPE also held a multi-stakeholder invitational conference in fall, 2012[1] to discuss issues facing pharmacy practice and education. The results of the conference influenced the direction and content of these revised standards. The first draft of the revised standards was approved by the ACPE Board of Directors in January 2014 and distributed to ACPE stakeholders in February 2014. Subsequently, a series of open hearings was conducted at national pharmacy meetings. Another Web-based survey that allowed anonymous completion by stakeholders was conducted during 2014, and an extensive review of the draft standards was completed by an advisory group from various sections of the academic and practice communities. The ACPE Board of Directors approved the revised standards on **January 21–25, 2015** with an effective date of **July 1, 2016**. The new standards will be referred to as "Standards 2016." Colleges and schools being evaluated by ACPE beginning in the fall of 2016 must comply with the new standards.

Revision of Standards: What's Different?

- *Format* – The standards revision process yielded two distinct documents: ***Standards*** and ***Guidance.*** The *Standards* document includes the 25 standards, required (key) elements, assessment elements, and required documentation for each individual standard. The *Guidance* document was developed to support colleges' and schools' efforts to enhance the quality of their PharmD programs and includes suggested strategies, additional examples of compliance evidence, and other important information to facilitate meeting standards. ACPE expects programs to be in compliance with all elements outlined in the *Standards* document and to use the information within the *Guidance* document to improve the quality of their programs. In other words, the *Standards* document contains required elements that all accredited Doctor of Pharmacy programs must meet, while the *Guidance* document contains clarifying statements and suggested strategies for improvement.

- *Philosophy and Emphasis* – Based on stakeholder feedback, the Standards have been refined to ensure that graduating students are "practice-ready" and "team-ready," that is, prepared to directly contribute to patient care working in collaboration with other healthcare providers. The revision has also placed greater emphasis on critical educational outcomes identified by CAPE and the assessment of the level of student

[1] Zellmer WA, Vlasses PH, Beardsley RS. Summary of the ACPE Consensus Conference on Advancing Quality in Pharmacy Education. Am J Pharm Educ. 2013; 77, 3, Article 44.

achievement of these outcomes. The Standards focus on the (1) development of students' professional knowledge, skills, abilities, behaviors, and attitudes, including scientific foundation, knowledge application, and practice competencies, (2) the manner in which programs assess students' acquisition of knowledge and application of knowledge to practice, (3) mastery of skills and achievement of competencies, and (4) the importance of both curricular and co-curricular experiences in advancing the professional development of students. Throughout the revision process, ACPE has focused on addressing the environmental factors noted above in *Revision of Standards: Background.*

- *Importance of Assessment* – Based on feedback from the academy and other stakeholders, the new Standards emphasize assessment as a means of improving the quality of pharmacy education. Having valid and reliable assessment mechanisms in place will provide additional insights to programs regarding their strengths and deficiencies. Throughout the Standards, terms such as "adequate," "sufficient," and "appropriate" appear in several areas. Programs are expected to utilize assessment outcome data to determine if the available resources are adequate, sufficient, etc. to allow for compliance with the Standards.

- *Organization of Standards* – Although, at a minimum, the Standards address the same critical areas as in previous versions, they have been restructured, simplified, and clarified. The Standards are organized into three major sections (Educational Outcomes; Structure and Process to Promote Achievement of Educational Outcomes; and Assessment). The Structure and Process section is further organized into four subsections: (1) Planning and Organization, (2) Educational Program for the Doctor of Pharmacy Degree, (3) Students, and (4) Resources. In the third section, Standards 24 and 25 list the assessment elements for Educational Outcomes and Structure and Process, respectively. Standards and Key Elements are phrased as declarative statements describing the various attributes of an accredited Doctor of Pharmacy program. Programs not meeting the expectations and requirements outlined within these statements will be out of compliance with the Standards. Standards annotated with an asterisk (*) are appropriate for new program initiatives and alternate pathways to degree completion, such as an accelerated curriculum, geographically dispersed campuses, online or distance-learning-based programs, and other educational innovations. Three appendices are included within the Standards. Appendix 1 is a revision of the former Appendix B in Standards 2007 and describes the required elements of the didactic component of the PharmD curriculum. Appendix 2 (formerly Appendix C in Standards 2007) describes the expectations of the experiential learning component of the curriculum. Appendix 3 outlines the documentation needed for the Standards and Key Elements.

- *Organization of Guidance* – Materials are provided in this document to help colleges and schools of pharmacy: (1) understand the breadth and scope of issues underlying the achievement of each standard and (2) achieve academic program enhancement. Suggested strategies for quality improvement are based on evidence gleaned from the literature and/or the evaluation of successful programs.

- *Innovation* – Colleges or schools may choose avenues other than those suggested in the guidance document to achieve compliance with the Standards. In all cases, however, ACPE requires evidence that standards are being met.

- *Style* – The Chicago Manual of Style, 15th Edition, Chicago: The University of Chicago Press, 2003, was used in the preparation of the standards and guidelines.

Summary

ACPE looks forward to working with colleges and schools of pharmacy during the transition to the revised professional degree program Standards. Through its strategic plan, ACPE will also be investigating opportunities for better and more standardized ways to evaluate the achievement of the Standards, including the identification of valid outcome measures to be monitored across all accredited programs. In addition, ACPE will be improving its policies and procedures to allow for greater standardization, consistency, efficiency, and effectiveness in its accreditation activities and evaluations. Feedback from ACPE stakeholders is always invited and valued.

ACPE Board of Directors and Staff
January 25, 2015

STANDARDS AND KEY ELEMENTS

SECTION I: EDUCATIONAL OUTCOMES

The educational outcomes[2] described herein have been deemed essential to the contemporary practice of pharmacy in a healthcare environment that demands interprofessional collaboration and professional accountability for holistic patient well-being.

Standard 1: Foundational Knowledge

The professional program leading to the Doctor of Pharmacy degree (hereinafter "the program") develops in the graduate the knowledge, skills, abilities, behaviors, and attitudes necessary to apply the foundational sciences to the provision of patient-centered care.

Key Element:

1.1. Foundational knowledge – The graduate is able to develop, integrate, and apply knowledge from the foundational sciences (i.e., biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care.

Standard 2: Essentials for Practice and Care

The program imparts to the graduate the knowledge, skills, abilities, behaviors, and attitudes necessary to provide patient-centered care, manage medication use systems, promote health and wellness, and describe the influence of population-based care on patient-centered care.

Key Elements:

2.1. Patient-centered care – The graduate is able to provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).

2.2. Medication use systems management – The graduate is able to manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

2.3. Health and wellness – The graduate is able to design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

2.4. Population-based care – The graduate is able to describe how population-based care influences patient-centered care and the development of practice guidelines and evidence-based best practices.

[2] Adapted from the American Association of Colleges of Pharmacy's Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes, 2013.

Standard 3: Approach to Practice and Care

The program imparts to the graduate the knowledge, skills, abilities, behaviors, and attitudes necessary to solve problems; educate, advocate, and collaborate, working with a broad range of people; recognize social determinants of health; and effectively communicate verbally and nonverbally.

Key Elements:

3.1. Problem solving – The graduate is able to identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

3.2. Education – The graduate is able to educate all audiences by determining the most effective and enduring ways to impart information and assess learning.

3.3. Patient advocacy – The graduate is able to represent the patient's best interests.

3.4. Interprofessional collaboration – The graduate is able to actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

3.5. Cultural sensitivity – The graduate is able to recognize social determinants of health to diminish disparities and inequities in access to quality care.

3.6. Communication – The graduate is able to effectively communicate verbally and nonverbally when interacting with individuals, groups, and organizations.

Standard 4: Personal and Professional Development

The program imparts to the graduate the knowledge, skills, abilities, behaviors, and attitudes necessary to demonstrate self-awareness, leadership, innovation and entrepreneurship, and professionalism.

Key Elements:

4.1. Self-awareness – The graduate is able to examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

4.2. Leadership – The graduate is able to demonstrate responsibility for creating and achieving shared goals, regardless of position.

4.3. Innovation and entrepreneurship – The graduate is able to engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

4.4. Professionalism – The graduate is able to exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

SECTION II: STRUCTURE AND PROCESS TO PROMOTE ACHIEVEMENT OF EDUCATIONAL OUTCOMES

The Educational Outcomes articulated in Section I can only be fully achieved in an academic culture purposely designed to nurture learners and to support the administrators, faculty, preceptors, and staff who mentor them. The standards in Section II describe essential structures and processes that provide the organizational stability and potential for advancement critical to continuous quality improvement in pharmacy education.

Subsection IIA: Planning and Organization

Standard 5: Eligibility and Reporting Requirements

The program meets all stated degree-granting eligibility and reporting requirements.

Key Elements:

5.1. Autonomy – The academic unit offering the Doctor of Pharmacy program is an autonomous unit organized as a college or school of pharmacy (within a university or as an independent entity). This includes autonomy to manage the professional program within stated policies and procedures, as well as applicable state and federal regulations.

5.2. Legal empowerment – The college or school is legally empowered to offer and award the Doctor of Pharmacy degree.

5.3. Dean's leadership – The college or school is led by a dean, who serves as the chief administrative and academic officer of the college or school and is responsible for ensuring that all accreditation requirements of ACPE are met.

5.4. Regional/institutional accreditation – The institution housing the college or school, or the independent college or school, has (or, in the case of new programs, is seeking) full accreditation by a regional/institutional accreditation agency recognized by the U.S. Department of Education.

5.5. Regional/institutional accreditation actions – The college or school reports to ACPE within 30 days any issue identified in regional/institutional accreditation actions that may have a negative impact on the quality of the professional degree program and compliance with ACPE standards.

5.6. Substantive change – The dean promptly reports substantive changes in organizational structure and/or processes (including financial factors) to ACPE for the purpose of evaluation of their impact on programmatic quality.

Standard 6: College or School Vision, Mission, and Goals

The college or school publishes statements of its vision, mission, and goals.

Key Elements:

6.1. College or school vision and mission – These statements are compatible with the vision and mission of the university in which the college or school operates.

6.2. Commitment to educational outcomes – The mission statement is consistent with a commitment to the achievement of the Educational Outcomes (Standards 1–4).

6.3. Education, scholarship, service, and practice – The statements address the college or school's commitment to professional education, research and scholarship, professional and community service, pharmacy practice, and continuing professional development.

6.4. Consistency of initiatives – All program initiatives are consistent with the college or school's vision, mission, and goals.

6.5. Subunit goals and objectives alignment – If the college or school organizes its faculty into subunits, the subunit goals are aligned with those of the college or school.

Standard 7: Strategic Plan

The college or school develops, utilizes, assesses, and revises on an ongoing basis a strategic plan that includes tactics to advance its vision, mission, and goals.

Key Elements:

7.1. Inclusive process – The strategic plan is developed through an inclusive process, including faculty, staff, students, preceptors, practitioners, and other relevant constituents, and is disseminated in summary form to key stakeholders.

7.2. Appropriate resources – Elements within the strategic plan are appropriately resourced and have the support of the university administration as needed for implementation.

7.3. Substantive change planning – Substantive programmatic changes contemplated by the college or school are linked to its ongoing strategic planning process.

Standard 8: Organization and Governance

The college or school is organized and staffed to advance its vision and facilitate the accomplishment of its mission and goals.

Key Elements:

8.1. Leadership collaboration – University leadership and the college or school dean collaborate to advance the program's vision and mission and to meet ACPE accreditation standards. The dean has direct access to the university administrator(s) with ultimate responsibility for the program.

8.2. Qualified dean – The dean is qualified to provide leadership in pharmacy professional education and practice, research and scholarship, and professional and community service.

8.3. Qualified administrative team – The dean and other college or school administrative leaders have credentials and experience that have prepared them for their respective roles and collectively have the needed backgrounds to effectively manage the educational program.

8.4. Dean's other substantial administrative responsibilities – If the dean is assigned other substantial administrative responsibilities, the university ensures adequate resources to support the effective administration of the affairs of the college or school.

8.5. Authority, collegiality, and resources – The college or school administration has defined lines of authority and responsibility, fosters organizational unit collegiality and effectiveness, and allocates resources appropriately.

8.6. College or school participation in university governance – College or school administrators and faculty are effectively represented in the governance of the university, in accordance with its policies and procedures.

8.7. Faculty participation in college or school governance – The college or school uses updated, published documents, such as bylaws, policies, and procedures, to ensure faculty participation in the governance of the college or school.

8.8. Systems failures – The college or school has comprehensive policies and procedures that address potential systems failures, including technical, administrative, and curricular failures.

8.9. Alternate pathway equitability* – The college or school ensures that any alternative pathways to the Doctor of Pharmacy degree are equitably resourced and integrated into the college or school's regular administrative structures, policies, and procedures, including planning, oversight, and evaluation.

Standard 9: Organizational Culture

The college or school provides an environment and culture that promotes self-directed lifelong learning, professional behavior, leadership, collegial relationships, and collaboration within and across academic units, disciplines, and professions.

Key Elements:

9.1. Leadership and professionalism – The college or school demonstrates a commitment to developing professionalism and to fostering leadership in administrators, faculty, preceptors, staff, and students. Faculty and preceptors serve as mentors and positive role models for students.

9.2. Behaviors – The college or school has policies that define expected behaviors for administrators, faculty, preceptors, staff, and students, along with consequences for deviation from those behaviors.

9.3. Culture of collaboration – The college or school develops and fosters a culture of collaboration within subunits of the college or school, as well as within and outside the university, to advance its vision, mission, and goals, and to support the profession.

Subsection IIB: Educational Program for the Doctor of Pharmacy Degree

Standard 10: Curriculum Design, Delivery, and Oversight

The curriculum is designed, delivered, and monitored by faculty to ensure breadth and depth of requisite knowledge and skills, the maturation of professional attitudes and behaviors, and the

opportunity to explore professional areas of interest. The curriculum also emphasizes active learning pedagogy, content integration, knowledge acquisition, skill development, and the application of knowledge and skills to therapeutic decision-making.

Key Elements:

10.1. Program duration – The professional curriculum is a minimum of four academic years of full-time study or the equivalent.

10.2. Curricular oversight – Curricular oversight involves collaboration between faculty and administration. The body/bodies charged with curricular oversight: (1) are representative of the faculty at large, (2) include student representation, (3) effectively communicate and coordinate efforts with body/bodies responsible for curricular assessment, and (4) are adequately resourced to ensure and continually advance curricular quality.

10.3. Knowledge application – Curricular expectations build on a pre-professional foundation of scientific and liberal studies. The professional curriculum is organized to allow for the logical building of a sound scientific and clinical knowledge base that culminates in the demonstrated ability of learners to apply knowledge to practice.

10.4. Skill development – The curriculum is rigorous, contemporary, and intentionally sequenced to promote integration and reinforcement of content and the demonstration of competency in skills required to achieve the Educational Outcomes articulated in Section I.

10.5. Professional attitudes and behaviors development – The curriculum inculcates professional attitudes and behaviors leading to personal and professional maturity consistent with the Oath of the Pharmacist.

10.6. Faculty and preceptor credentials/expertise – All courses in the curriculum are taught by individuals with academic credentials and expertise that are explicitly linked to their teaching responsibilities.

10.7. Content breadth and depth – Programs document, through mapping or other comparable methods, the breadth and depth of exposure to curricular content areas deemed essential to pharmacy education at the doctoral level (Appendices 1 and 2).

10.8. Pharmacists' Patient Care Process – The curriculum prepares students to provide patient-centered collaborative care as described in the *Pharmacists' Patient Care Process* model endorsed by the Joint Commission of Pharmacy Practitioners.

10.9. Electives – Time is reserved within the core curriculum for elective didactic and experiential education courses that permit exploration of and/or advanced study in areas of professional interest.

10.10. Feedback – The curriculum allows for timely, formative performance feedback to students in both didactic and experiential education courses. Students are also provided the opportunity to give formative and/or summative feedback to faculty, including preceptors, on their perceptions of teaching/learning effectiveness.

10.11. Curriculum review and quality assurance – Curriculum design, delivery, and sequencing are regularly reviewed and, when appropriate, revised by program faculty to ensure optimal achievement of educational outcomes with reasonable student workload expectations.

10.12. Teaching and learning methods – The didactic curriculum is delivered via teaching/learning methods that: (1) facilitate achievement of learning outcomes, (2) actively engage learners, (3) promote student responsibility for self-directed learning, (4) foster collaborative learning, and (5) are appropriate for the student population (i.e., campus-based vs. distance-based).

10.13. Diverse learners – The didactic curriculum incorporates teaching techniques and strategies that address the diverse learning needs of students.

10.14. Course syllabi – Syllabi for didactic and experiential education courses, developed and updated through a faculty-approved process, contain information that supports curricular quality assurance assessment.

10.15. Experiential quality assurance – A quality assurance procedure for all pharmacy practice experiences is established and implemented to: (1) facilitate achievement of stated course expectations, (2) standardize key components of experiences across all sites offering the same experiential course, and (3) promote consistent assessment of student performance.

10.16. Remuneration/employment – Students do not receive payment for participating in curricular pharmacy practice experiences, nor are they placed in the specific practice area within a pharmacy practice site where they are currently employed.[3]

10.17. Academic integrity* – To ensure the credibility of the degree awarded, the validity of individual student assessments, and the integrity of student work, the college or school ensures that assignments and examinations take place under circumstances that minimize opportunities for academic misconduct. The college or school ensures the correct identity of all students (including distance students) completing proctored assessments.

Standard 11: Interprofessional Education (IPE)

The curriculum prepares all students to provide entry-level, patient-centered care in a variety of practice settings as a contributing member of an interprofessional team. In the aggregate, team exposure includes prescribers as well as other healthcare professionals.

Key Elements:

11.1. Interprofessional team dynamics – All students demonstrate competence in interprofessional team dynamics, including articulating the values and ethics that underpin interprofessional practice, engaging in effective interprofessional communication, including conflict resolution and documentation skills, and honoring interprofessional roles and responsibilities. Interprofessional team dynamics are

[3] A professional degree program in an institution that meets the definition of and has an institution-wide commitment to "cooperative education" (Cooperative Education and Internship Association; http://www.ceiainc.org) may apply to ACPE for a waiver of this requirement.

introduced, reinforced, and practiced in the didactic and Introductory Pharmacy Practice Experience (IPPE) components of the curriculum, and competency is demonstrated in Advanced Pharmacy Practice Experience (APPE) practice settings.

11.2. Interprofessional team education – To advance collaboration and quality of patient care, the didactic and experiential curricula include opportunities for students to learn about, from, and with other members of the interprofessional healthcare team. Through interprofessional education activities, students gain an understanding of the abilities, competencies, and scope of practice of team members. Some, but not all, of these educational activities may be simulations.

11.3. Interprofessional team practice – All students competently participate as a healthcare team member in providing direct patient care and engaging in shared therapeutic decision-making. They participate in experiential educational activities with prescribers/student prescribers and other student/professional healthcare team members, including face-to-face interactions that are designed to advance interprofessional team effectiveness

Standard 12: Pre-Advanced Pharmacy Practice Experience (Pre-APPE) Curriculum

The Pre-APPE curriculum provides a rigorous foundation in the biomedical, pharmaceutical, social/administrative/behavioral, and clinical sciences, incorporates Introductory Pharmacy Practice Experience (IPPE), and inculcates habits of self-directed lifelong learning to prepare students for Advanced Pharmacy Practice Experience (APPE).

Key Elements:

12.1. Didactic curriculum – The didactic portion of the Pre-APPE curriculum includes rigorous instruction in all sciences that define the profession (see Appendix 1). Appropriate breadth and depth of instruction in these sciences is documented regardless of curricular model employed (e.g., blocked, integrated, traditional 'stand-alone' course structure, etc.).

12.2. Development and maturation – The Pre-APPE curriculum allows for the development and maturation of the knowledge, skills, abilities, attitudes, and behaviors that underpin the Educational Outcomes articulated in Standards 1–4 and within Appendices 1 and 2.

12.3. Affective domain elements – Curricular and, if needed, co-curricular activities and experiences are purposely developed and implemented to ensure an array of opportunities for students to document competency in the affective domain-related expectations of Standards 3 and 4. Co-curricular activities complement and advance the learning that occurs within the formal didactic and experiential curriculum.

12.4. Care across the lifespan – The Pre-APPE curriculum provides foundational knowledge and skills that allow for care across the patient's lifespan.

12.5. IPPE expectations – IPPEs expose students to common contemporary U.S. practice models, including interprofessional practice involving shared patient care decision-making, professional ethics and expected behaviors, and direct patient care activities. IPPEs are structured and sequenced to intentionally develop in students a

clear understanding of what constitutes exemplary pharmacy practice in the U.S. prior to beginning APPE.

12.6. IPPE duration – IPPE totals no less than 300 clock hours of experience and is purposely integrated into the didactic curriculum. A minimum of 150 hours of IPPE are balanced between community and institutional health-system settings.

12.7. Simulation for IPPE – Simulated practice experiences (a maximum of 60 clock hours of the total 300 hours) may be used to mimic actual or realistic pharmacist-delivered patient care situations. However, simulation hours do not substitute for the 150 clock hours of required IPPE time in community and institutional health-system settings. Didactic instruction associated with the implementation of simulated practice experiences is not counted toward any portion of the 300 clock hour IPPE requirement.

Standard 13: Advanced Pharmacy Practice Experience (APPE) Curriculum

A continuum of required and elective APPEs is of the scope, intensity, and duration required to support the achievement of the Educational Outcomes articulated in Standards 1–4 and within Appendix 2 to prepare practice-ready graduates. APPEs integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities.

Key Elements:

13.1. Patient care emphasis – Collectively, APPEs emphasize continuity of care and incorporate acute, chronic, and wellness-promoting patient-care services in outpatient (community/ambulatory care) and inpatient (hospital/health system) settings.

13.2. Diverse populations – In the aggregate, APPEs expose students to diverse patient populations as related to age, gender, race/ethnicity, socioeconomic factors (e.g., rural/urban, poverty/affluence), and disease states)

13.3. Interprofessional experiences – In the aggregate, students gain in-depth experience in delivering direct patient care as part of an interprofessional team.

13.4. APPE duration – The curriculum includes no less than 36 weeks (1440 hours) of APPE. All students are exposed to a minimum of 160 hours in each required APPE area. The majority of APPE is focused on direct patient care.

13.5. Timing – APPEs follow successful completion of all IPPE and required didactic curricular content. Required capstone courses or activities that provide opportunity for additional professional growth and insight are allowed during or after completion of APPEs. These activities do not compromise the quality of the APPEs, nor count toward the required 1440 hours of APPE.

13.6. Required APPE – Required APPEs occur in four practice settings: (1) community pharmacy; (2) ambulatory patient care; (3) hospital/health system pharmacy; and (4) inpatient general medicine patient care.

13.7. Elective APPE – Elective APPEs are structured to give students the opportunity to: (1) mature professionally, (2) secure the breadth and depth of experiences needed to

achieve the Educational Outcomes articulated in Standards 1–4, and (3) explore various sectors of practice.

13.8. Geographic restrictions – Required APPEs are completed in the United States or its territories or possessions. All quality assurance expectations for U.S.-based experiential education courses apply to elective APPEs offered outside of the U.S.

Subsection IIC: Students

Standard 14: Student Services

The college or school has an appropriately staffed and resourced organizational element dedicated to providing a comprehensive range of services that promote student success and well-being.

Key Elements:

14.1. FERPA – The college or school has an ordered, accurate, and secure system of student records in compliance with the Family Educational Rights and Privacy Act (FERPA). Student services personnel and faculty are knowledgeable regarding FERPA law and its practices.

14.2. Financial aid – The college or school provides students with financial aid information and guidance by appropriately trained personnel.

14.3. Healthcare – The college or school offers students access to adequate health and counseling services. Appropriate immunization standards are established, along with the means to ensure that such standards are satisfied.

14.4. Advising – The college or school provides academic advising, curricular and career-pathway counseling, and information on post-graduate education and training opportunities adequate to meet the needs of its students.

14.5. Nondiscrimination – The college or school establishes and implements student service policies that ensure nondiscrimination as defined by state and federal laws and regulations.

14.6. Disability accommodation – The college or school provides accommodations to students with documented disabilities that are determined by the university Disability Office (or equivalent) to be reasonable, and provides support to faculty in accommodating disabled students.

14.7. Student services access* – The college or school offering multiple professional degree programs (e.g., PharmD/MPH) or pathways (campus and distance pathways) ensures that all students have equitable access to a comparable system of individualized student services (e.g., tutorial support, faculty advising, counseling, etc.).

Standard 15: Academic Environment

The college or school develops, implements, and assesses its policies and procedures that promote student success and well-being.

Key elements:

15.1. Student information – The college or school produces and makes available to enrolled and prospective students updated information of importance, such as governance documents, policies and procedures, handbooks, and catalogs.

15.2. Complaints policy – The college or school develops, implements, and makes available to students a complaints policy that includes procedures for how students may file complaints within the college or school and also directly to ACPE regarding their college or school's adherence to ACPE standards. The college or school maintains a chronological record of such student complaints, including how each complaint was resolved.

15.3. Student misconduct – The college or school develops and implements policies regarding academic and non-academic misconduct of students that clearly outline the rights and responsibilities of, and ensures due process for, all parties involved.

15.4. Student representation – The college or school considers student perspectives and includes student representation, where appropriate, on committees, in policy-development bodies, and in assessment and evaluation activities.

15.5. Distance learning policies* – For colleges and schools offering distance learning opportunities, admissions information clearly explains the conditions and requirements related to distance learning, including full disclosure of any requirements that cannot be completed at a distance.

Standard 16: Admissions

The college or school develops, implements, and assesses its admission criteria, policies, and procedures to ensure the selection of a qualified and diverse student body into the professional degree program.

Key elements:

16.1. Enrollment management – Student enrollment is managed by college or school administration. Enrollments are in alignment with available physical, educational, financial, faculty, staff, practice site, preceptor, and administrative resources.

16.2. Admission procedures – A duly constituted committee of the college or school has the responsibility and authority for the selection of students to be offered admission. Admission criteria, policies, and procedures are not compromised regardless of the size or quality of the applicant pool.

16.3. Program description and quality indicators – The college or school produces and makes available to the public, including prospective students: (1) a complete and accurate description of the professional degree program; (2) the program's current accreditation status; and (3) ACPE-required program performance information including on-time graduation rates and most recent NAPLEX first-attempt pass rates.

16.4. Admission criteria – The college or school sets performance expectations for admission tests, evaluations, and interviews used in selecting students who have the potential for success in the professional degree program and the profession. Applicant

performance on admission criteria is documented; and the related records are maintained by the college or school as per program/university requirements.

16.5. Admission materials – The college or school produces and makes available to prospective students the criteria, policies, and procedures for admission to the professional degree program. Admission materials clearly state academic expectations, required communication skills, types of personal history disclosures that may be required, and professional and technical standards for graduation.

16.6. Written and oral communication assessment – Written and oral communication skills are assessed in a standardized manner as part of the admission process.

16.7. Candidate interviews – Standardized interviews (in-person, telephonic, and/or computer-facilitated) of applicants are conducted as a part of the admission process to assess affective domain characteristics (i.e., the Personal and Professional Development domain articulated in Standard 4).

16.8. Transfer and waiver policies – A college or school offering multiple professional degree programs, or accepting transfer students from other schools or colleges of pharmacy, establishes and implements policies and procedures for students who request to transfer credits between programs. Such policies and procedures are based on defensible assessments of course equivalency. A college or school offering multiple pathways to a single degree has policies and procedures for students who wish to change from one pathway to another.

Standard 17: Progression

The college or school develops, implements, and assesses its policies and procedures related to student progression through the PharmD program.

Key elements:

17.1. Progression policies – The college or school creates, makes available to students and prospective students, and abides by criteria, policies, and procedures related to:

- Academic progression
- Remediation
- Missed course work or credit
- Academic probation
- Academic dismissal
- Dismissal for reasons of misconduct
- Readmission
- Leaves of absence
- Rights to due process
- Appeal mechanisms (including grade appeals)

17.2. Early intervention – The college or school's system of monitoring student performance provides for early detection of academic and behavioral issues. The college or school develops and implements appropriate interventions that have the potential for successful resolution of the identified issues.

Subsection IID: Resources

Standard 18: Faculty and Staff—Quantitative Factors

The college or school has a cohort of faculty and staff with the qualifications and experience needed to effectively deliver and evaluate the professional degree program.

Key Elements:

18.1. Sufficient faculty – The college or school has a sufficient number of faculty members to effectively address the following programmatic needs:

- Teaching (didactic, simulation, and experiential)
- Professional development
- Research and other scholarly activities
- Assessment activities
- College/school and/or university service
- Intraprofessional and interprofessional collaboration
- Student advising and career counseling
- Faculty mentoring
- Professional service
- Community service
- Pharmacy practice
- Responsibilities in other academic programs (if applicable)
- Support of distance students and campus(es) (if applicable)*

18.2. Sufficient staff – The college or school has a sufficient number of staff to effectively address the following programmatic needs:

- Student and academic affairs-related services, including recruitment and admission
- Experiential education
- Assessment activities
- Research administration
- Laboratory maintenance
- Information technology infrastructure
- Pedagogical and educational technology support
- Teaching assistance
- General faculty and administration clerical support
- Support of distance students and campus(es) (if applicable)*

Standard 19: Faculty and Staff—Qualitative Factors

Faculty and staff have academic and professional credentials and expertise commensurate with their responsibilities to the professional program and their academic rank.

Key Elements:

19.1. Educational effectiveness – Faculty members have the capability and demonstrate a continuous commitment to be effective educators and are able to effectively use contemporary educational techniques to promote student learning in all offered pathways.

19.2. Scholarly productivity – The college or school creates an environment that both requires and promotes scholarship and also develops mechanisms to assess both the quantity and quality of faculty scholarly productivity.

19.3. Service commitment – In the aggregate, faculty engage in professional, institutional, and community service that advances the program and the profession of pharmacy.

19.4. Practice understanding – Faculty members, regardless of their discipline, have a conceptual understanding of and commitment to advancing current and proposed future pharmacy practice.

19.5. Faculty/staff development – The college or school provides opportunities for career and professional development of its faculty and staff, individually and collectively, to enhance their role-related skills, scholarly productivity, and leadership.

19.6. Policy application – The college or school ensures that policies and procedures for faculty and staff recruitment, performance review, promotion, tenure (if applicable), and retention are applied in a consistent manner.

Standards 20: Preceptors

The college or school has a sufficient number of preceptors (practice faculty or external practitioners) to effectively deliver and evaluate students in the experiential component of the curriculum. Preceptors have professional credentials and expertise commensurate with their responsibilities to the professional program.

Key Elements:

20.1. Preceptor criteria – The college or school makes available and applies quality criteria for preceptor recruitment, orientation, performance, and evaluation. The majority of preceptors for any given student are U.S. licensed pharmacists.

20.2. Student-to-preceptor ratio – Student to precepting pharmacist ratios allow for the individualized mentoring and targeted professional development of learners.

20.3. Preceptor education and development – Preceptors are oriented to the program's mission, the specific learning expectations for the experience outlined in the syllabus, and effective performance evaluation techniques before accepting students. The college or school fosters the professional development of its preceptors commensurate with their educational responsibilities to the program.

20.4. Preceptor engagement – The college or school solicits the active involvement of preceptors in the continuous quality improvement of the educational program, especially the experiential component.

20.5. Experiential education administration – The experiential education component of the curriculum is led by a pharmacy professional with knowledge and experience in experiential learning. The experiential education program is supported by an appropriate number of qualified faculty and staff.

Standard 21: Physical Facilities and Educational Resources

The college or school has adequate and appropriately equipped physical and educational facilities to achieve its mission and goals.

Key Elements:

21.1. Physical facilities – The college or school's physical facilities (or the access to other facilities) meet legal and safety standards, utilize current educational technology, and are clean and well maintained.

21.2. Physical facilities' attributes – The college or school's physical facilities also include adequate:

- Faculty office space with sufficient privacy to permit accomplishment of responsibilities
- Space that facilitates interaction of administrators, faculty, students, and interprofessional collaborators
- Classrooms that comfortably accommodate the student body and that are equipped to allow for the use of required technology
- Laboratories suitable for skills practice, demonstration, and competency evaluation
- Access to educational simulation capabilities
- Faculty research laboratories with well-maintained equipment including research support services within the college or school and the university
- Animal facilities that meet care regulations (if applicable)
- Individual and group student study space and student meeting facilities

21.3. Educational resource access – The college or school makes available technological access to current scientific literature and other academic and educational resources by students, faculty, and preceptors.

21.4 Librarian expertise access – The college or school has access to librarian resources with the expertise needed to work with students, faculty, and preceptors on effective literature and database search and retrieval strategies.

Standard 22: Practice Facilities

The college or school has the appropriate number and mix of facilities in which required and elective practice experiences are conducted to accommodate all students. Practice sites are appropriately licensed and selected based on quality criteria to ensure the effective and timely delivery of the experiential component of the curriculum.

Key Elements:

22.1. Quality criteria – The college or school employs quality criteria for practice facility recruitment and selection, as well as setting forth expectations and evaluation based on student opportunity to achieve the required Educational Outcomes as articulated in Standards 1–4.

22.2. Affiliation agreements – The college or school secures and maintains signed affiliation agreements with the practice facilities it utilizes for the experiential component of the curriculum. At a minimum, each affiliation agreement ensures that all experiences are conducted in accordance with state and federal laws.

22.3. Evaluation – Practice sites are regularly evaluated. Quality enhancement initiatives and processes are established, as needed, to improve student learning outcomes.

Standard 23: Financial Resources

The college or school has current and anticipated financial resources to support the stability of the educational program and accomplish its mission, goals, and strategic plan.

Key Elements:

23.1. Enrollment support – The college or school ensures that student enrollment is commensurate with resources.

23.2. Budgetary input – The college or school provides input into the development and operation of a budget that is planned, executed, and managed in accordance with sound and accepted business practices.

23.3. Revenue allocation – Tuition and fees for pharmacy students are not increased to support other educational programs if it compromises the quality of the professional program.

23.4. Equitable allocation – The college or school ensures that funds are sufficient to maintain equitable facilities (commensurate with services and activities) across all program pathways.

SECTION III: ASSESSMENT OF STANDARDS AND KEY ELEMENTS

In the spirit of continuous quality improvement and transparency, colleges and schools evaluate and report to constituents the extent to which they meet their programmatic goals. Insights gained from the valid and reliable assessment of outcomes related to mission, strategic planning, educational programs, and other key institutional initiatives are channeled into constructive change to enhance programmatic quality.

Standard 24: Assessment Elements for Section I: Educational Outcomes

The college or school develops, resources, and implements a plan to assess attainment of educational outcomes to ensure that graduates are prepared to enter practice.

Key Elements:

24.1. Formative and summative assessment – The assessment plan incorporates systematic, valid, and reliable knowledge-based and performance-based formative and summative assessments.

24.2. Standardized and comparative assessments – The assessment plan includes standardized assessments as required by ACPE (see Appendix 3) that allow for national comparisons and college- or school-determined peer comparisons.

24.3. Student achievement and readiness – The assessment plan measures student achievement at defined levels of the professional competencies that support attainment of the Educational Outcomes in aggregate and at the individual student level. In addition to college/school desired assessments, the plan includes an assessment of student readiness to:

- Enter advanced pharmacy practice experiences
- Provide direct patient care in a variety of healthcare settings
- Contribute as a member of an interprofessional collaborative patient care team

24.4. Continuous improvement – The college or school uses the analysis of assessment measures to improve student learning and the level of achievement of the Educational Outcomes.

Standard 25: Assessment Elements for Section II: Structure and Process

The college or school develops, resources, and implements a plan to assess attainment of the Key Elements within Standards 5–23.

Specific Key Elements:

25.1. Assessment of organizational effectiveness – The college or school's assessment plan is designed to provide insight into the effectiveness of the organizational structure in engaging and uniting constituents and positioning the college or school for success through purposeful planning.

25.2. Program evaluation by stakeholders – The assessment plan includes the use of data from AACP standardized surveys of graduating students, faculty, preceptors, and alumni.

25.3. Curriculum assessment and improvement – The college or school systematically assesses its curricular structure, content, organization, and outcomes. The college or school documents the use of assessment data for continuous improvement of the curriculum and its delivery.

25.4. Faculty productivity assessment – The college or school systematically assesses the productivity of its faculty in scholarship, teaching effectiveness, and professional and community service.

25.5. Pathway comparability* – The assessment plan includes a variety of assessments that will allow comparison and establishment of educational parity of alternative program pathways to degree completion, including geographically dispersed campuses and online or distance learning-based programs.

25.6. Interprofessional preparedness – The college or school assesses the preparedness of all students to function effectively and professionally on an interprofessional healthcare team.

25.7. Clinical reasoning skills – Evidence-based clinical reasoning skills, the ability to apply these skills across the patient's lifespan, and the retention of knowledge that underpins these skills, are regularly assessed throughout the curriculum.

25.8. APPE preparedness – The Pre-APPE curriculum leads to a defined level of competence in professional knowledge, knowledge application, patient and population-based care, medication therapy management skills, and the attitudes important to success in the advanced experiential program. Competence in these areas is assessed prior to the first APPE.

25.9. Admission criteria – The college or school regularly assesses the criteria, policies, and procedures to ensure the selection of a qualified and diverse student body, members of which have the potential for academic success and the ability to practice in team-centered and culturally diverse environments.

Appendix 1
Required Elements of the Didactic Doctor of Pharmacy Curriculum[4]

The following didactic content areas and associated learning expectations are viewed as central to a contemporary, high-quality pharmacy education and are incorporated at an appropriate breadth and depth in the required didactic Doctor of Pharmacy curriculum. Where noted, content areas may be addressed in the pre-professional curriculum (i.e., as requirements for admission). Required content areas may be delivered within individual or integrated courses, and may involve multiple disciplines.

This appendix was purposely written at the level of broad learning outcomes. It was constructed to provide statements of concepts and understandings essential for pharmacists to master, rather than a list of required topics to cover in the didactic curriculum. The goal is to ensure that critical areas of learning are included in the curricula of all programs without dictating how the lessons are structured, organized, or delivered.

The clear expectation embedded within Appendix 1 is that students will develop the comprehensive knowledge base required to be 'practice ready' and that they will be able to retain, recall, build upon, and apply that knowledge to deliver quality patient care in a variety of entry-level practice settings.

NOTE: The topics under each Science category are organized in alphabetical order.

Biomedical Sciences (may be addressed in the pre-professional curriculum)

Biochemistry

- Structure, properties, biological functions, applicable kinetics, and metabolic fate of macromolecules essential to life (proteins, lipids, carbohydrates, and nucleic acids). Application of these concepts to identify endogenous targets for drug therapy and rational drug design strategies.

Biostatistics

- Appropriate use of commonly employed statistical tests, management of data sets, and the evaluation of the validity of conclusions generated based on the application of those tests to the data sets.

Human Anatomy

- Structure of major human body systems at the cellular, tissue, organ, and system level.

Human Physiology

- Homeostatic function and normal response reactions across the lifespan of non-diseased human cells, organs, and systems.

Immunology

- Human immune system components, innate and adaptive immune responses to infection, injury and disease, and augmentation of the human immune system to prevent disease.

[4] Revised Appendix B from Standards 2007.

Medical Microbiology

- Structure, function, and properties of microorganisms (bacteria, viruses, parasites, and fungi) responsible for human disease, and rational approaches to their containment or eradication.

Pathology/Pathophysiology

- Basic principles, mechanisms, functional changes and metabolic sequelae of human disease impacting cells, organs, and systems.

Pharmaceutical Sciences

Clinical Chemistry

- Application of clinical laboratory data to disease state management, including screening, diagnosis, progression, and treatment evaluation.

Extemporaneous Compounding

- Preparation of sterile and non-sterile prescriptions which are pharmaceutically accurate regarding drug product and dose, free from contamination, and appropriately formulated for safe and effective patient use. Analysis of the scientific principles and quality standards upon which these compounding requirements are based.

Medicinal Chemistry

- Chemical basis of drug action and behavior in vivo and in vitro, with an emphasis on pharmacophore recognition and the application of physicochemical properties, structure-activity relationships, intermolecular drug-receptor interactions and metabolism to therapeutic decision-making.

Pharmaceutical Calculations

- Mastery of mathematical skills required to accurately prepare prescriptions (including extemporaneously compounded dosage forms) that are therapeutically sound and safe for patient use. Calculation of patient-specific nutritional and drug dosing/delivery requirements.

Pharmaceutics/Biopharmaceutics

- Physicochemical properties of drugs, excipients, and dosage forms important to the rational design and manufacture of sterile and non-sterile products. Application of physical chemistry and dosage form science to drug stability, delivery, release, disposition, pharmacokinetics, therapeutic effectiveness, and the development of quality standards for drug products.

Pharmacogenomics/genetics

- Genetic basis for disease and individual differences in metabolizing enzymes, transporters, and other biochemicals impacting drug disposition and action that underpin the practice of personalized medicine.

Pharmacokinetics

- Mathematical determination of the rate of drug movement from one therapeutic or physiologic compartment to another. Application of physicochemical and kinetic principles and parameters to therapeutically important issues, such as drug delivery, disposition, therapeutic effectiveness, and beneficial or adverse interactions in general and specific populations.

Pharmacology

- Pharmacodynamics, mechanisms of therapeutic and adverse drug actions and interactions, lifespan-dependent variations in physiology or biochemistry that impact drug action and effectiveness, and application of these principles to therapeutic decision-making.

Toxicology

- Pharmacodynamics, mechanisms, prevention, and treatment of the toxic effects of drugs and poisons, including poisons associated with bioterrorism.

Social/Administrative/Behavioral Sciences

Cultural Awareness

- Exploration of the potential impact of cultural values, beliefs, and practices on patient care outcomes.

Ethics

- Exploration of approaches for resolving ethical dilemmas in patient care, with an emphasis on moral responsibility and the ability to critically evaluate viable options against the needs of patients and other key stakeholders.

Healthcare Systems

- Examination of U.S. health systems and contemporary reimbursement models in which patient-centered and/or population-based care is provided and paid for, and how social, political, economic, organizational, and cultural factors influence providers' ability to ensure patient safety and deliver coordinated interprofessional care services.

History of Pharmacy

- Exploration of the evolution of pharmacy as a distinct profession, the transition from a focus on the drug to a focus on the patient and the drug (including pharmacist-provided patient care), and major milestones and contributors in the evolution of pharmacy.

Pharmacoeconomics

- Application of economic principles and theories to the provision of cost-effective pharmacy products and services that optimize patient-care outcomes, particularly in situations where healthcare resources are limited.

Pharmacoepidemiology

- Cause-and-effect patterns of health and disease in large populations that advance safe and effective drug use and positive care outcomes within those populations.

Pharmacy Law and Regulatory Affairs

- Federal and appropriate state-specific statutes, regulations, policies, executive orders, and court decisions that regulate the practice of pharmacy, including the mitigation of prescription drug abuse and diversion.

Practice Management

- Application of sound management principles (including operations, information, resource, fiscal, and personnel) and quality metrics to advance patient care and service delivery within and between various practice settings.

Professional Communication

- Analysis and practice of verbal, non-verbal, and written communication strategies that promote effective interpersonal dialog and understanding to advance specific patient care, education, advocacy, and/or interprofessional collaboration goals. Exploration of technology-based communication tools and their impact on healthcare delivery, healthcare information, and patient empowerment.

Professional Development/Social and Behavioral Aspects of Practice

- Development of professional self-awareness, capabilities, responsibilities, and leadership. Analysis of contemporary practice roles and innovative opportunities, and inculcation of professional attitudes, behaviors, and dispositions.

Research Design

- Evaluation of research methods and protocol design required to conduct valid and reliable studies to test hypotheses or answer research questions, and to appropriately evaluate the validity and reliability of the conclusions of published research studies.

Clinical Sciences

Clinical Pharmacokinetics

- Application of basic pharmacokinetic principles and mathematical models to calculate safe and effective doses of drugs for individual patients, and adjust therapy as appropriate through the monitoring of drug concentration in biological fluids.

Health Informatics

- Effective and secure design and use of electronic and other technology-based systems, including electronic health records, to capture, store, retrieve, and analyze data for use in patient care, and confidentially/legally share health information in accordance with federal policies.

Health Information Retrieval and Evaluation

- Critical analysis and application of relevant health sciences literature and other information resources to answer specific patient-care and/or drug-related questions and provide evidence-based therapeutic recommendations to healthcare providers or, when appropriate, the public.

Medication Dispensing, Distribution and Administration

- Preparation, dispensing and administration of prescriptions, identification and prevention of medication errors and interactions, maintaining and using patient profile systems and

prescription processing technology and/or equipment, and ensuring patient safety. Educating about appropriate medication use and administration.

Natural Products and Alternative and Complementary Therapies

- Evidence-based evaluation of the therapeutic value, safety, and regulation of pharmacologically active natural products and dietary supplements. Cultural practices commonly selected by practitioners and/or patients for use in the promotion of health and wellness, and their potential impact on pharmacotherapy.

Patient Assessment

- Evaluation of patient function and dysfunction through the performance of tests and assessments leading to objective (e.g., physical assessment, health screening, and lab data interpretation) and subjective (patient interview) data important to the provision of care.

Patient Safety

- Analysis of the systems- and human-associated causes of medication errors, exploration of strategies designed to reduce/eliminate them, and evaluation of available and evolving error-reporting mechanisms.

Pharmacotherapy

- Evidence-based clinical decision making, therapeutic treatment planning, and medication therapy management strategy development for patients with specific diseases and conditions that complicate care and/or put patients at high risk for adverse events. Emphasis on patient safety, clinical efficacy, pharmacogenomic and pharmacoeconomic considerations, and treatment of patients across the lifespan.

Public Health

- Exploration of population health management strategies, national and community-based public health programs, and implementation of activities that advance public health and wellness, as well as provide an avenue through which students earn certificates in immunization delivery and other public health-focused skills.

Self-Care Pharmacotherapy

- Therapeutic needs assessment, including the need for triage to other health professionals, drug product recommendation/selection, and counseling of patients on non-prescription drug products, non-pharmacologic treatments and health/wellness strategies.

Appendix 2
Expectations within the APPE Curriculum

Builds on IPPE. APPE follows IPPE, which is designed to progressively develop the professional insights and skills necessary to advance into responsibilities in APPE. Colleges and schools use a variety of IPPE delivery mechanisms to ensure students are ready to meet the expectations of APPE. IPPE involves interaction with practitioners and patients to advance patient welfare in authentic practice settings, and provides exposure to both medication distribution systems and high-quality, interprofessional, team-based patient care.

APPE curriculum. APPE ensures that students have multiple opportunities to perform patient-centered care and other activities in a variety of settings. Experiences are in-depth, structured, and comprehensive in the aggregate, and carefully coordinated with other components of the PharmD curriculum. Collectively, APPE hones the practice skills, professional judgment, behaviors, attitudes and values, confidence, and sense of personal and professional responsibility required for each student to practice independently and collaboratively in an interprofessional, team-based care environment.

Learning outcomes. General and experience-specific learning outcomes are established for all APPEs. Learning outcomes identify the competencies to be achieved, expected patient populations (if applicable), level of student responsibility, and the setting needed for the outcomes to be met. Learning outcomes for each experience are mapped to the professional practice competencies outlined in the Standards, as well as to any additional competencies developed by the school or college.

Assessment. Colleges and schools assess student achievement of APPE competencies within their assessment plans using reliable, validated assessments. Formative feedback related to specific performance criteria is provided to students throughout the experience. At a minimum, performance competence is documented midway through the experience and at its completion.

Learning activities. The APPE curriculum, in the aggregate, includes but is not limited to: (1) direct patient care, (2) interprofessional interaction and practice, (3) medication dispensing, distribution, administration, and systems management, and (4) professional development. Examples of possible activities within these broad areas are listed in the Guidance document.

Interprofessional interaction. The need for interprofessional interaction is paramount to successful treatment of patients. Colleges and schools provide pharmacy students the opportunity to gain interprofessional skills using a variety of mechanisms including face-to-face interactions in clinical settings or in real-time telephonic or video-linked interactions. Regardless of the methods used, students demonstrate those interprofessional skills articulated in Standard 11.

Direct patient care focus. The majority of student time in APPE is focused on the provision of direct patient care to both inpatients and outpatients. APPE is of sufficient length to permit continuity of care of individual patients and documentation of achievement of competencies associated with the APPE curriculum.

Practice settings. Students demonstrate competence within four main practice types: community, ambulatory care, general medicine, and health system pharmacy. Colleges and

schools draft competency statements for each type of setting along with appropriate assessment plans.

Ambulatory care. Ambulatory care pharmacy practice is the provision of integrated, accessible health care services by pharmacists who are accountable for addressing medication needs, developing sustained partnerships with patients, and practicing in the context of family and community.[5] The ambulatory care setting involves interprofessional communication and collaboration to provide acute and chronic patient care that can be accomplished outside the inpatient setting.

Blended environments. The literature documents that the demarcations between various types of pharmacy practice are blurring. A specific APPE may involve skill-development activities in more than one of the four required practice settings (i.e., the 'blending' of two or more of the four required practice types within one APPE). In addition, 'longitudinal' experiences may exist where students participate in more than one of the four required APPEs within the same institution (i.e., taking a general medicine APPE, an ambulatory care APPE, and a health system pharmacy APPE in the same hospital). The key is that a college or school documents how its APPE program is balanced between the four required practice areas and how all program outcomes, student performance competencies, and ACPE standards are met.

Elective APPE. Elective rotations allow students to explore areas of professional interest and/or expand their understanding of professional opportunities. Elective APPE may include a maximum of two experiences without a patient care focus.

[5] *www.bpsweb.org/specialties/AmbulatoryCarePharmacy.cfm*

Appendix 3
Required Documentation for
Standards and Key Elements 2016

To provide evidence of achievement of the standards and key elements, colleges and schools provide, at a minimum, the following outcomes data and documentation. Many of these documents are embedded within the *Assessment and Accreditation Management System* (AAMS) system (co-developed and managed by the American Association of Colleges of Pharmacy and ACPE), while others are created by individual colleges and schools to be shared with ACPE at appropriate times during the quality improvement process (e.g., within self-study submissions or during site visits). As noted below, an individual document may be used for multiple standards. Colleges and schools are encouraged to develop additional documentation processes to meet their mission-specific quality assurance needs.

Standard 1 – Foundational Knowledge

- Student academic performance throughout the program (e.g., progression rates, academic probation rates, attrition rates)
- Annual performance of students nearing completion of the didactic curriculum on the Pharmacy Curriculum Outcomes Assessment (PCOA) - an assessment of knowledge of the essential content areas identified in Appendix 1
- Performance of graduates (passing rate) on NAPLEX
- Performance of graduates in the various NAPLEX competency areas
- Performance of graduates on Multistate Pharmacy Jurisprudence Examination (MPJE) and/or other state required law examination

Standard 2 – Essentials for Practice and Care

- Outcome data from assessments summarizing overall student achievement of relevant didactic, IPPE, and APPE learning objectives

Standard 3 – Approach to Practice and Care

- Examples of student participation in Interprofessional Education activities (didactic, simulation, experiential)
- Outcome data from assessments summarizing overall student achievement of relevant didactic, IPPE, and APPE learning objectives
- Outcome data from assessments summarizing overall student participation in Interprofessional Education activities
- Examples of curricular and co-curricular experiences made available to students to document developing competence in affective domain-related expectations of Standard 3
- Outcome data from assessments of student achievement of problem-solving and critical thinking capabilities
- Outcome data from assessments of students' ability to communicate professionally, advocate for patients, and educate others
- Outcome data from assessments of students' demonstration of cultural awareness and sensitivity.

Standard 4 – Personal and Professional Development

- Outcome data from assessments summarizing students' overall achievement of relevant didactic, IPPE, and APPE learning objectives
- Examples of curricular and co-curricular experiences made available to students to document developing competence in affective domain-related expectations of Standard 4

- Outcome data from assessments summarizing students' overall achievement of professionalism, leadership, self-awareness, and creative thinking expectations
- Description of tools utilized to capture students' reflections on personal/professional growth and development
- Description of processes by which students are guided to develop a commitment to continuous professional development and to self-directed lifelong learning

Standard 5 – Eligibility and Reporting Requirements

- Legal authority to offer/award the Doctor of Pharmacy degree
- Documents verifying institutional accreditation
- Accreditation reports identifying deficiencies (if applicable)
- University organizational chart
- Description of level of autonomy of the college or school

Standard 6 – College or School Vision, Mission, and Goals

- Vision, mission, and goal statements (college, school, parent institution, department/division)
- Outcome data from assessments summarizing the extent to which the college or school is achieving its vision, mission, and goals

Standard 7 – Strategic Plan

- Strategic planning documents, including a description of the process through which the strategic plan was developed.
- Outcome data from assessments summarizing the implementation of the strategic plan

Standard 8 - Organization and Governance

- Curriculum vitae of the dean and others on the administrative leadership team
- Organization chart of the college or school
- Responsibilities of dean and other administrative leadership team members
- Faculty governance documents (by-laws, policies, procedures, etc.)
- List of committees and designated charges
- Evidence of faculty participation in university governance
- Policies and procedures related to system failures, data security and backup, and contingency planning
- Outcome data from assessments (e.g., AACP faculty, preceptor, graduating student and alumni surveys) summarizing the effectiveness of the organizational structure and governance

Standard 9 – Organizational Culture

- Policies describing expectations of faculty, administrators, students, and staff behaviors
- Examples of intra/interprofessional and intra/interdisciplinary collaboration
- Affiliation agreements for purposes of research, teaching, or service (if applicable)
- Outcome data from AACP faculty and graduating student surveys related to collaboration, morale, professionalism, etc.

Standard 10 - Curriculum Design, Delivery, and Oversight

- Description of curricular and degree requirements, including elective didactic and experiential expectations
- All required and elective didactic and experiential course syllabi
- Mapping of required curricular content and experiential education expectations to individual courses
- Curriculum vitae of faculty teaching within the curriculum
- A tabular display of courses, faculty members assigned to each course and their role, and credentials supporting the teaching assignments

- List of Curriculum Committee (or equivalent) members with position/affiliation within college/school
- List of charges, assignments, and accomplishments of Curriculum Committee over the last 1–3 years
- Examples of tools (e.g., portfolios) used by students to document self-assessment of, and reflection on, learning needs, plans and achievements, and professional growth and development
- Sample documents used by faculty, preceptors, and students to evaluate learning experiences and provide formative and/or summative feedback
- Policies related to academic integrity
- Policies related to experiential learning that ensures compliance with Key Element 10.15
- Examples of instructional methods used by faculty and the extent of their employment to:
  - Actively engage learners
  - Integrate and reinforce content across the curriculum
  - Provide opportunity for mastery of skills
  - Instruct within the experiential learning program
  - Stimulate higher-order thinking, problem-solving, and clinical-reasoning skills
  - Foster self-directed lifelong learning skills and attitudes
  - Address/accommodate diverse learning styles
  - Incorporate meaningful interprofessional learning opportunities

Standard 11 - Interprofessional Education (IPE)

- Vision, mission, and goal statements related to IPE
- Statements addressing IPE and practice contained within student handbooks and/or catalogs
- Relevant syllabi for required and elective didactic and experiential education courses that incorporate elements of IPE to document that concepts are reinforced throughout the curriculum and that IPE-related skills are practiced at appropriate times during pre-APPE
- Student IPPE and APPE evaluation data documenting extent of exposure to interprofessional, team-based patient care
- Outcome data from assessments summarizing students' overall achievement of expected interprofessional educational outcomes in the pre-APPE and APPE curriculum

Standard 12 - Pre-APPE Curriculum

- Description of curricular and degree requirements, including elective didactic and experiential expectations
- A tabular display of courses, faculty members assigned to each course and their role, and credentials supporting the teaching assignments
- Curriculum maps documenting breadth and depth of coverage of Appendix 1 content and learning expectations in the professional (and, if appropriate, preprofessional) curriculum
- Examples of curricular and co-curricular experiences made available to students to document developing competence in affective domain-related expectations of Standards 3 and 4
- Outcome data from assessments of student preparedness to progress to APPE (e.g., comprehensive assessments of knowledge, skills, and competencies)
- Description of the IPPE learning program and its goals, objectives, and time requirements
- List of simulation activities and hours counted within the IPPE 300 hour requirement
- IPPE course syllabi including general and rotation-specific learning objectives and extent of IPE exposure

- IPPE student and preceptor manuals
- IPPE student and preceptor assessment tools
- IPPE preceptor recruitment and training manuals and/or programs
- List of active preceptors with credentials and practice site
- Outcome data from assessments summarizing overall student achievement of Pre-APPE educational outcomes

Standard 13 – APPE Curriculum

- Overview of APPE curriculum (duration, types of required and elective rotations, etc.)
- APPE course syllabi including general and experience-specific learning objectives
- APPE student and preceptor manuals
- APPE student and preceptor assessment tools
- Preceptor recruitment and training manuals and/or programs
- List of active preceptors with credentials and practice site
- Student APPE evaluation data documenting extent of exposure to diverse patient populations and interprofessional, team-based patient care
- Outcome data from assessments summarizing students' overall achievement of APPE educational outcomes

Standard 14 - Student Services

- Organizational chart depicting Student Services unit and responsible administrators
- Synopsis of curriculum vitae of Students Services administrative officer(s) and staff
- Student Handbook and/or Catalog (college, school or university), and copies of additional information distributed to students regarding student service elements (financial aid, health insurance, etc.)
- Copies of policies that ensure nondiscrimination and access to allowed disability accommodations
- Results from AACP graduating student survey
- Student feedback on the college/school's self-study

Standard 15 - Academic Environment

- Student Handbook and/or Catalog (college, school, or university), and copies of additional information distributed to students regarding the academic environment
- URL or link to program information on college or school's website
- Copy of student complaint policy related to college or school adherence to ACPE standards
- Number and nature of student complaints related to college or school adherence to ACPE standards (inspection of the file by evaluation teams during site visits)
- List of committees involving students with names and professional years of current student members
- College or school's code of conduct (or equivalent) addressing professional behavior

Standard 16 – Admissions

- Organizational chart depicting Admissions unit and responsible administrator(s)
- Enrollment data for the past five years by year; and by branch campus or pathway (if applicable)
- Enrollment projections for the next five years
- Pharmacy College Aptitude Test (PCAT) scores (mean, maximum, and minimum), if required, for the past three admitted classes
- GPA scores (mean, maximum, and minimum) for preprofessional coursework for the past three admitted classes
- GPA scores (mean, maximum, and minimum) for preprofessional science courses for the past three admitted classes

- Comparisons of PCAT scores and preprofessional GPAs with peer schools for last admitted three admitted classes
- List of admission committee members with name and affiliation
- Policies and procedures regarding the admissions process including selection of admitted students, transfer of credit, and course waiver policies
- Professional and technical standards for school, college, and/or university (if applicable)
- List of preprofessional requirements for admission into the professional program
- Copies of instruments used during the admissions process including interview evaluation forms and assessment of written and oral communication
- Section of Student Handbook and/or Catalog (college, school, or university) regarding admissions
- Link to websites (or documentation of other mechanisms) that provide to the public information on required indicators of quality

Standard 17 – Progression

- Policies and procedures regarding student progression, early intervention, academic probation, remediation, missed course work or credit, leaves of absence, dismissal, readmission, due process, and appeals
- Section of Student Handbook and/or Catalog (college, school, or university) regarding student progression
- Student progression and academic dismissal data for the last three admitted classes
- Correlation analysis of admission variables and academic performance

Standard 18 – Faculty and Staff – Quantitative Factors

- Organizational chart depicting all full-time faculty by department/division
- List of full-time staff in each department/division and areas of responsibility
- ACPE documents (e.g., resource report) related to number of full-time and part-time faculty
- List of faculty turnover for the past five years by department/division with reasons for departure
- Description of coursework mapped to full-time and part-time faculty teaching in each course
- Results from AACP faculty survey regarding adequacy of quantitative strength of faculty and staff

Standard 19 – Faculty and Staff – Qualitative Factors

- Curriculum vitae of faculty and professional staff
- List of active research areas of faculty and an aggregate summary of faculty publications/presentations over the past three years.
- Procedures employed to promote a conceptual understanding of contemporary practice, particularly among non-pharmacist faculty
- Policies and procedures related to faculty recruitment, performance review, promotion, tenure (if applicable), and retention
- Faculty Handbook
- Data from AACP faculty survey regarding qualitative faculty factors

Standard 20 - Preceptors

- List of active preceptors with credentials and practice site
- Number, percentage of required APPE precepted by non-pharmacists categorized by type of experience.
- Description of practice sites (location, type of practice, student/preceptor ratios)
- Policies and procedures related to preceptor recruitment, orientation, development, performance review, promotion, and retention

- Examples of instruments used by preceptors to assess student performance
- Curriculum vitae of administrator(s) responsible for overseeing the experiential education component of the curriculum
- Description of the structure, organization and administrative support of the Experiential Education office (or equivalent)
- Results from AACP preceptor surveys

Standard 21 – Physical Facilities and Educational Resources

- Floor plans for college or school's facilities and descriptions of the use(s) of available space
- Description of shared space and how such space promotes interprofessional interaction
- Analysis of the quantity and quality of space available to the program and plans to address identified inadequacies.
- Documentation of Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) or other nationally recognized accreditation of animal care facilities, if applicable
- Results from AACP faculty, alumni, and graduating student surveys related to facilities
- Description of educational resources available to faculty, preceptors, and students (library, internet access, etc.)

Standard 22 – Practice Facilities

- Description of practice sites (location, type of practice, student:preceptor ratios) and involvement in IPPE, APPE, or both
- Policies and procedures related to site selection, recruitment, and assessment
- Examples of quality improvements made to improve student learning outcomes as a result of site/facility assessment
- Examples of affiliation agreements between college/school and practice sites (all agreements will be reviewed during site visits)
- ACPE IPPE and APPE Capacity Charts

Standard 23 – Financial Resources

- Detailed budget plan as defined by AACP (previous, current, and subsequent years)
- Description of college or school's budgetary processes
- In-state and out-of-state tuition compared to peer schools
- Results from AACP faculty survey regarding adequacy of financial resources

Standard 24 – Assessment Elements for Section I

- College or school's curriculum assessment plan(s)
- Description of formative and summative assessments of student learning and professional development used by college or school
- Description of standardized and comparative assessments of student learning and professional development used by college or school
- Description of how the college or school uses information generated within the curriculum assessment plan(s) to advance quality within its Doctor of Pharmacy program

Standard 25 – Assessment Elements for Section II

- College or school's program assessment plan(s)
- Description of how the college or school uses information generated by assessments related to its organizational effectiveness, mission and goals, didactic curriculum, experiential learning program, co-curriculum activities, and interprofessional education to advance overall programmatic quality

AACP Curriculum Outcomes and Entrustable Professional Activities (COEPA) 2022

Report of the 2022-2023 Academic Affairs Standing Committee: Revising the Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes and Entrustable Professional Activities

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AACP Curriculum Outcomes and Entrustable Professional Activities (COEPA) 2022

PREAMBLE

The American Association of Colleges of Pharmacy (AACP) Curricular Outcomes and Entrustable Professional Activities (COEPA, pronounced *COPA*) 2022 document represents the fifth version (preceded by AACP Academic Affairs panels in 1994, 1998, 2004 and 2013) of the Center for the Advancement of Pharmacy Education (CAPE) educational outcomes (EO).[1] EOs are statements that describe what a learner should be able to do at the end of a program.[1] EOs represent the knowledge, skills, and attitudes (KSAs) of pharmacists that all students should demonstrate upon graduation.[2] The EOs were created to facilitate curricular discussions with faculty and preceptors within the Academy and to guide curriculum planning, delivery, and assessment within pharmacy programs.

The Entrustable Professional Activities (EPAs) 2022 document represents the second version. EPAs for new pharmacy graduates were originally established in 2016 by the AACP Academic Affairs Committee to translate the CAPE educational outcomes into practice activities.[3,4] The EPAs describe the work of pharmacists as workplace tasks and responsibilities that all students are entrusted to do in the experiential setting with direct or distant supervision.[5,6] It is important to note that EPAs are activities and are broad tasks or groups of tasks.[5] These activities become the focus of an assessment when an individual is observed performing the activity. As such, preceptors assess the level of supervision a student needs to perform or execute the clinical activity/task using an entrustment decision scale.[3-7]

The 2021-2023 AACP Academic Affairs Committees was charged by the AACP Board of Directors (BOD) to review and revise the CAPE Educational Outcomes and EPAs to ensure that they are relevant and consistent with emerging scientific and clinical developments and practitioner roles. Since CAPE and EPAs were in two separate documents previously,[1,3] the process of revising both at the same time and streamlining them into one document led the Committee to rename them COEPA. The AACP BOD selected Scott K. Stolte, Pharm.D. to chair the panel, Melissa S. Medina Ed.D. to serve as vice-chair (and later appointed as chair), Michelle Farland, Pharm.D. to serve as vice-chair, and Kelly Ragucci, Pharm.D., to serve as the AACP staff liaison. The AACP BOD also invited ten pharmacy faculty to serve on the Committee who represented diversity through their institution type and year established, geographic location, discipline, practice type, and appointment, role at their institution, opinions, and perspectives. The Committee's primary charge was to review and revise the CAPE EOs and the EPAs for new pharmacy graduates. Since the Committee was revising the EOs and EPAs, it renamed them as the Curricular Outcomes and Entrustable Professional Activities (COEPA) for New Pharmacy Graduates to reduce confusion and emphasize the relationship between EOs and EPAs.

Since the last publication of the 2013 CAPE EOs, new models and strategies to describe the pharmacist's roles have emerged including the Pharmacist Patient Care Process[8], the introduction of EPAs[3,4,7] and updates to the Oath of a Pharmacist.[9] Pharmacists' scope of practice also evolved to meet the needs of the public in the COVID-19 pandemic, reflecting pharmacists' education and expertise. Additional factors that influenced the current EO and

EPA revisions arose from various sources and events such as the societal awakening to strive for health equity, cultural humility, and social justice; advancements in technology-assisted learning approaches and healthcare delivery; the NAPLEX blueprint revision;[10] and adjustments to the Interprofessional Education Collaborative Core Competencies for Interprofessional Collaborative Practice,[11] to name a few. These influences are addressed throughout the revised document.

To initiate and guide their work, the Committee sought frequent input about the existing 2013 EOs[1] and 2016 EPAs[3,4] as well as draft versions the current committee proposed. The Committee solicited their feedback during July 2021 through October 2022 from all AACP members through surveys, virtual town hall meetings, targeted interviews, individual queries, AACP task force consultations, focus groups, open comment periods, and structured feedback sessions at the AACP 2022 Interim and Annual meetings. The Committee also sought input regarding the revision from the members of other national pharmacy organizations via multiple invitations distributed through the Joint Commission of Pharmacy Practitioners (JCPP). Through these feedback efforts, general themes and suggestions emerged that have helped shape the revision process. The Committee summarized, quantified, vetted, and addressed all stakeholder feedback and made modifications to the EOs and EPAs as needed.

Specifically, the majority of feedback to the EOs called for: 1) an expansion of Domain 1 (knowledge); 2) incorporation of topics related to digital health; 3) revision of language in Domain 2 (skills) to reinforce person-centered care and align terminology with the Pharmacist's Patient Care Process; 4) expansion of the cultural sensitivity definition, with additional clarity of terminology and expected outcomes; 5) clarification of advocacy for patients and the profession; 6) expansion of the emphasis on teamwork skills; 7) incorporation of professional identity formation (PIF).[12-14] The Committee also received feedback that pharmacy program's curricula were already overloaded, so careful attention was given to simplify where possible and avoid significant content additions.

The feedback received regarding the EPAs related to: 1) include a general scope of practice available across practice settings; 2) reflect common activities completed by pharmacists in practice at an entry-level in a variety of practice settings; 3) remove EPAs that are not workplace activities that can be directly observed; 4) avoid language that is specific to immunization administration; instead update to include testing, treating, and administering medications; 5) ensure EPA assessments measure trust of the pharmacist observer and that these levels of entrustment are not tied to grades.

Once initial feedback was collected, the Committee then outlined **the overarching core values and guiding principles** that serve as the foundation for pharmacists and underpin knowledge, skills, attitudes, and behaviors required across the entire profession. These core values include but are not limited to compassion, empathy, inclusiveness, integrity, justice, responsibility, and trustworthiness. Without these values, which are derived from and consistent with the recently updated Oath of a Pharmacist, the individual will not be able to meet the needs of the public to serve as an effective pharmacist.[9] In addition, pharmacists are called to enter into a non-

reciprocal covenantal relationship with patients which encompasses advocating for patients who cannot or may not be able to advocate for themselves and to also advocate for the profession in order to advance pharmacy practice. Through this relationship, it is expected that pharmacists be cognizant of ethical issues/concerns as well as diversity, equity, inclusion, and accessibility factors that may impact patient care. Another guiding principle is for pharmacy programs to foster students' PIF, which is defined as the transformative process of identifying and internalizing the ways of being and relating within a professional role.[12-14] It is how students learn to think, act and feel like a member of the pharmacy community and it influences how a professional perceives, explains, presents and conducts themselves.[12-14] After the core values were established, the Committee started the revision process by acknowledging that EOs and EPAs are applicable across multiple practice settings that pharmacists commonly work in at entry into the profession and it is intended that graduates should continue developing these throughout one's career.

The Committee then revised the EOs and reduced the previous four domains into three domains by merging the previous two skills domains (domain two and three) into one skills domain.[1] The three new domains are knowledge, skills, and attitudes, which reflects a simplification and realignment with a recognized educational framework.[2,15] The subdomains were also revised from 15 into 12 subdomains. Each subdomain includes a one-word descriptor, an outcome description, and references to the literature as needed. The knowledge subdomain was aligned with the ACPE Appendix 1 and informed by the NAPLEX blueprint.[10,16] The skills subdomain (domain 2) was then reordered to reflects the skills needed to fulfill a pharmacist's role followed by skills needed to fulfill one's role on a team. The EO domains, subdomains, one-word descriptors, and outcome descriptions are provided in Table 1.

Next, the EPAs, which are designed as experiential/workplace activities (or tasks) were revised and reduced from 15 to 13 activities.[3-7] Each EPA requires a learner to acquire foundational knowledge, skills, and attitudes in the classroom setting before they can be entrusted with a task in the experiential setting.[3-7] The revised EPAs are in Table 2. The revised EPAs 1-10 are aligned with the Pharmacist's Patient Care Process and are mapped and designated accordingly (see Figure 1).[8] Bolded words in Tables 1 and 2 are listed in a glossary of terms and definitions along with references to the literature, in order to encourage a shared understanding of the key words (see Table 3).

Following the EPA revisions, the Committee then reviewed the original EPA levels of entrustment scale (see Table 4).[3] The original pharmacy entrustment decision scale was based on medical education's Ottawa scale,[17] which used five levels of supervision for the activity, ranging from observation only, even with direct supervision; perform with direct supervision; perform with reactive supervision (help is on request and quickly available, the preceptor trusts that the learner will ask for help); intermittent supervision (supervise at a distance and/or post hoc, learner can independently perform the task); to level 5 supervise more junior colleagues.[3-7] The Ottawa scale was designed for medical residents and then was extrapolated for use within undergraduate medical education.[17] This continuum of entrustment, starting with observation of activities through supervising colleagues is directly applicable to medicine's spectrum of

education and training. However, in pharmacy education, post-graduate training is not mandatory, therefore consistent achievement in an educational environment can be challenging to assess.

In the original Core EPAs for PharmD Graduates, five levels of entrustment were reported, though new graduates were only expected to reach the third level (reactive supervision) by PharmD graduation.[3,4] The five-level scale, including aspects of independent practice, would apply across a pharmacist's education and career, including post-graduate training and practice. The purpose of this Academic Affairs Committee report is to establish the expected entrustment level at graduation from a PharmD program, which aligns with the original Academic Affairs Committee 2015-16 EPA report as "reactive supervision."[3] It is recognized that logistical limitations such as pharmacy practice laws restrict the activities that student pharmacists are allowed to perform independently, which was a major focus of the 2015-2016 scales' fourth and fifth levels of entrustment supervision.[3] In operationalizing the EPAs in PharmD programs, the current Academic Affairs Committee removed the numeric levels of the entrustment framework to allow people to focus instead on the description of the levels (see Table 4). Regardless of the specific assessment tool schools and colleges of pharmacy may choose to use, reactive supervision remains the goal for PharmD graduates.

The Committee recommends that the entrustment level assessment focuses on the description of supervision versus on the numeric level as previously described.[3-7] The assessment of the students should be conducted prospectively.[18] The performance expectation within pharmacy programs should range from observation only (referred to preceptor modeling), to direct supervision (proactive supervision, doing EPAs with the preceptor), to indirect supervision (reactive supervision) during the scope of the PharmD program. Early learners may benefit from feedback that is more detailed. If programs find this level of feedback is needed, other entrustability scales that include additional sub-level descriptors have also been published.[18,19]

Once the Committee finished all the core EO and EPA-related revisions as the result of several rounds of feedback from the Academy, they presented the final draft of the COEPA document to the AACP BOD in October 2022.The BOD, on behalf of the AACP members, unanimously voted to accept and adopt the document as submitted in November 2022. The final document will be circulated to the Academy in the American Journal of Pharmaceutical Education (AJPE) and on the AACP website.

The Committee will also create and publish an implementation toolkit that includes resources to operationalize COEPA document for the Academy, including EO example learning objectives and EPA example tasks. This work will be offered to guide the delivery and assessment of the didactic and experiential curriculum and will be documented in a separate publication in AJPE. Each pharmacy program can utilize the example objectives and tasks as written, modify them, or create their own to fit the goals or strengths of their institution, as these are not designed to be prescriptive.

To provide additional guidance to the Academy, a third report will outline the relationship between EOs and EPAs across all learning settings, with anticipated publication in AJPE. The

Committee will map the 13 EPAs to the EO skills domain. The EPAs will not be mapped to the knowledge and attitudes domains since these domains are inherently required for all 13 EPAs.

Table 1: Revised 12 Educational Outcomes (Domains, Subdomains, One Word Descriptor and Outcome Description)*

Domain	Sub-Domain #	Sub-Domain	One Word Descriptor	Outcome Description
1 Knowledge	1.1	Scientific Thinking	Learner	Seek, analyze, integrate, and apply **foundational knowledge of medications and pharmacy practice** (**biomedical; pharmaceutical; social, behavioral, administrative; and clinical sciences**; drug classes; and **digital health**).[16,20]
2 Skills	2.1	Problem-solving Process	Problem-solver	Use **problem solving**[21] and **critical thinking** skills[22-23], along with an **innovative mindset**[24], to address challenges and to promote positive change.
	2.2	Communication	Communicator	Actively engage, listen, and **communicate**[25] verbally, nonverbally, and in writing when interacting with or **educating**[26] an individual, group, or organization.
	2.3	Cultural and Structural Humility[27,28]	Ally	Mitigate **health disparities**[29] by considering, recognizing, and **navigating**[30] cultural and **structural factors**[28,31] **(**e.g. **social determinants of health**[32], diversity, equity, inclusion, and accessibility) to improve access and health outcomes.
	2.4	Person-centered Care[33,34]	Provider	Provide **whole person care**[35] to individuals as the **medication specialist**[37] using the **Pharmacists' Patient Care Process**[8]
	2.5	Advocacy[38-40]	Advocate	Promote the best interests of patients and/or the pharmacy profession within healthcare settings and at the community, state, or national level.
	2.6	Medication-use Process Stewardship	Steward	**Optimize**[41-43] patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of **medication use systems**.[44]
	2.7	Interprofessional Collaboration	Collaborator	Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies.[11]
	2.8	Population Health and Wellness	Promoter	Assess factors that influence the health and wellness of a **population** and develop strategies to address those factors.[45]
	2.9	Leadership[46,47]	Leader	Demonstrate the ability to influence and support the achievement of shared goals on a team, regardless of one's role.
3 Attitudes	3.1	Self-awareness	Self-aware	Examine, reflect on, and address personal and professional attributes (e.g., knowledge, **metacognition,**[48,49] skills, abilities, beliefs, biases, motivation, **help-seeking strategies**,[50] and **emotional intelligence**[51] that could enhance or limit growth, development, & **professional identity formation**.[12-14]
	3.2	Professionalism[52]	Professional	Exhibit attitudes and behaviors that embody a commitment to building and maintaining trust with patients, colleagues, other health care professionals, and society.[9]

*Bolded words are listed in Table 3 that includes a glossary of terms, definitions, and references.

Table 2: Revised 13 ENTRUSTABLE PROFESSIONAL ACTIVITIES (EPAs)*^#

Activity
1. Collect information necessary to identify a patient's medication-related problems and health-related needs.
2. Assess collected information to determine a patient's medication-related problems and health-related needs.
3. Create a care plan in collaboration with the patient, others trusted by the patient, and other health professionals to **optimize** pharmacologic and nonpharmacologic treatment.[41-43]
4. Contribute patient specific medication-related expertise as part of an interprofessional care team.
5. Answer medication related questions using scientific literature.
6. Implement a care plan in collaboration with the patient, others trusted by the patient, and other health professionals.
7. Fulfill a medication order.
8. **Educate** the patient and others trusted by the patient regarding the appropriate use of a medication, device to administer a medication, or self-monitoring test.[26]
9. Monitor and evaluate the safety and effectiveness of a care plan.
10. Report adverse drug events and/or medication errors in accordance with site specific procedures.
11. Deliver medication or health-related **education** to health professionals or the public.[26]
12. Identify **populations** at risk for prevalent diseases and preventable adverse medication outcomes.[45]
13. Perform the technical, administrative, and supporting operations of a pharmacy practice site.

*EPAs are activities not assessments; EPAs delineate essential tasks of a pharmacist that a PharmD graduate can be entrusted with

^EPAs 1-10 are aligned with the **Pharmacist Patient Care Process** (PPCP) and colored according to the PPCP steps.[8] See Figure 1. EPA 1 aligns with Collect, EPA 2 aligns with Assess, EPAs 3-5 aligns with Plan, EPAs 6-8 align with Implement, and EPAs 9 and 10 are Monitor.[8]

#Bolded words are listed in Table 3 that includes a glossary of terms, definitions, and references.

Table 3 Glossary

1.1 Scientific Thinking (Learner) Definitions	• **Foundational knowledge -** outlined in ACPE Appendix 1 and include the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences as they pertain to the practice of pharmacy.[16] • **Biomedical sciences** - the preprofessional sciences (e.g., chemistry, physics, biology) and biomedical (e.g., anatomy, physiology, biochemistry, immunology, biostatistics).[16] • **Pharmaceutical sciences** – The pharmaceutical sciences build on principles introduced in the preprofessional biomedical sciences including pharmaceutics/biopharmaceutics, pharmacokinetics, pharmacology, toxicology, pharmacogenomics, medicinal chemistry, clinical chemistry, pharmaceutical calculations, and pharmaceutical compounding, which are taught in the professional pharmacy curriculum and collectively explain drug and/or drug product formulation, delivery, stability and action.[16] • **Social, behavioral, administrative sciences** - the disciplines and concepts of public health, epidemiology, economics, financial management, health behavior, outcomes, research methods, law and ethics, healthcare administration, management, and operations, marketing, communications, medication distribution systems taught within the professional pharmacy curriculum.[16] • **Clinical sciences** - the areas of the professional pharmacy curriculum focused on the integration and application of the biomedical, pharmaceutical, and social/behavioral/ administrative sciences to improve the human condition through the safe and efficacious use of medications.[16] • **Digital health –**digital technologies that improve health and includes categories such as mobile health, health information technology, wearable devices, telehealth and telemedicine, personalized medicine, and tools such as mobile health apps and software.[20]
2.1 Problem Solving Process (Problem Solver) Definitions	• **Problem solving skills**: Identify define problems that have multiple considerations (and possibly more than one viable solution); explore and prioritize potential strategies; compare and contrast potential solutions; design and evaluate implemented solutions using evidence and/or rationale and anticipate and reflect on outcomes.[21] • **Critical thinking** - evaluating conclusions by systematically examining the problem, evidence, & solution. It includes 6 core skills including interpretation, analysis, evaluation, inference, explanation, and self-regulation.[22,23] • **Innovative mindset** – a set of beliefs that includes being forward thinking, creative, open to testing, comfortable making mistakes and trying again; collaborative and focused on progress that allows a person to generate creative or novel solutions to problems that result in improved performance.[24]
2.2 Communication (Communicator) AND EPAs 8 and 11 Definitions	• **Communication:** Communication is the exchange of information between patients, health care providers and others that involves skills such listening, speaking, writing, observing nonverbal communication, decoding messages, giving and receiving feedback, and empathizing.[25] • **Educating:** Educating focuses how to package, deliver, coach and assess individuals to increase their ability to learn, retain, access and use knowledge. Educating involves teaching methods, instructional strategies, individual differences, and assessment techniques.[26]

2.3 Cultural and Structural Humility (Ally) Definitions	• **Cultural humility** – Ability to recognize one's own limitation in order to avoid making assumptions about other cultures, admitting that one does not know and is willing to learn from patients**/person/client/consumer/community** about their experiences, while being aware of one's own embeddedness in culture(s).[27] • **Structural humility** - The capacity of health care professionals to appreciate that their role is not to surmount oppressive structures but rather to understand knowledge and practice gaps vis-a` -vis structures, partner with other stakeholders to fill these gaps, and engage in self-reflection throughout these processes.[28] • **Health disparities** - preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.[29] • **Navigating –** strategies provided by individuals or teams that reduce barriers to care.[30] • **Structures** – The policies, economic systems, and other institutions (policing and judicial systems, schools, etc.) that have produced and maintain social inequities and health disparities, often along the lines of social categories such as race, class, gender, and sexuality.[28] • **Structural competency** – The trained ability to discern how a host of issues defined clinically as symptoms, attitudes, or diseases (e.g., depression, hypertension, obesity, smoking, medication "non-compliance", trauma, psychosis) also represent the downstream implications of several upstream decisions about such matters as health care and food delivery systems, zoning laws, urban and rural infrastructures, medicalization, or even about the very definitions of illness and health.[31] • **Social determinants of health** – conditions in the environments where people are born, live, work, play, age, and worship that affect a wide range of health, functioning, and quality of life outcomes and risks. There are 5 key domains: social and community context, education, neighborhood and built environment, health and health care, and economic stability.[32]

2.4 Person-Centered Care (Provider) Definitions	• **Person-centered care –** A holistic approach to use with patients to be more inclusive. A broadened definition of patient-centered care that extends the concept beyond clinical care where health-care providers are encouraged to partner with patients, families, and caregivers, to co-design and deliver personalized care, including prevention and promotion activities, that provides people with the high-quality care they need and improves health-care system efficiency and effectiveness.[33,34] • **Whole person care**- Whole person health involves looking at the whole person—not just separate organs or body systems—and considering multiple factors that promote either health or disease. It means helping and empowering individuals, families, communities, and populations to improve their health in multiple interconnected biological, behavioral, social, and environmental areas.[35] • **Patient** – An individual who interacts with a clinician either because of real or perceived illness, for health promotion and disease prevention and/or to meet social needs.[36] • **Medication Specialist –** During the PharmD program students develop specialized knowledge in the safe and effective use of medications. However, a PharmD curriculum does not provide sufficient deliberate practice with focused feedback to achieve expert-level performance. We expect they will continue to develop expertise after graduation.[37] • **Pharmacist's Patient Care Process (PPCP)** – a consistent process for the delivery of patient care across the profession that is applicable to any setting where pharmacists provide care and for any patient care service provided by pharmacists. The process includes collect, assess, plan, implement, and follow-up.[8] See Figure 1.

2.5 Advocacy (Advocate) Definitions	• **Advocacy** – The process by which the actions of individuals or groups attempt to bring about social and/or organizational change on behalf of a particular health goal, program, interest, or population.[38-40]
2.6 – Medication-use Process Stewardship (Steward) AND EPA 3 Definitions	• **Optimize medications** - Occurs when there is a blend between: 1) developing an optimal medication regimen, that is appropriate for the patient, effective for the medical condition, evidence-based, cost effective, and safe for the patient to use; and 2) using shared decision making: a person-centered approach that incorporates the patient's needs, abilities, values, and beliefs, and taking steps to ensure the medication can be properly used in the setting it will be administered.[41-43] • **Medication Use System/Process** - A complex process comprised of medication prescribing, order processing, dispensing, administration, and effects monitoring (e.g., intended or unintended effects).[44]
2.7 Interprofessional Collaboration (Collaborator) Definitions	• **IPEC competencies** – There are four core competency domains: 1) values and ethics; 2) roles and responsibilities for collaborative practice; 3) interprofessional communication; and 4) teamwork and team-based care. The IPEC competencies address maintaining a climate of mutual respect and shared values; using knowledge of one's own role and those of other professions; communicating using a team approach; and appreciating team dynamics, relationship-building values, and teamwork principles.[11]
2.8 Population Health and Wellness (Promoter) AND EPA 12 Definitions	• **Population-based care** - A comprehensive care approach where practitioners assess the health needs of a specific population, implement and evaluate interventions to improve the health of that population, and provide care for individual patients in the context of the culture, health status, and health needs of the populations of which that patient is a member.[45]
2.9 Leadership (Leader) Definitions	• **Leadership -** Leadership is a function of knowing yourself, creating a culture of trust and open communication, having a vision that is well communicated, empowering others, taking a broad view of situations, and forming strategic alliances.[46] Leaders are compared to managers where there are some subtle differences. **Managers** are responsible for identifying, implementing, and overseeing resources to effectively accomplish specific projects or processes.[47]
3.1 Self-awareness (Self-aware) Definitions	• **Metacognition** – a type of cognition that regulates thinking and learning and consists of 3 self-assessment skills including planning, monitoring, and evaluating.[48,49] • **Help seeking** - Assessing needs and finding assistance when a deficit is identified that is associated with academic success. Behaviors may include seeking professional counseling, meditating, exercising, or engaging in the arts.[50] • **Emotional intelligence -** The ability to identify and manage one's own emotions, as well as the emotions of others. It includes the skills of emotional awareness, or the ability to identify and name one's own emotions; the ability to harness those emotions and apply them to tasks like thinking and problem solving; and the ability to manage emotions, which includes both regulating one's own emotions when necessary and helping others to do the same.[51] • **Professional Identity Formation** - Involves internalizing and demonstrating the behavioral norms, standards, and values of a professional community, such that one comes to "think, act and feel" like a member of that community. Professional identity influences how a professional perceives, explains, presents and conducts themselves.[12-14]
3.2 Professionalism (Professional)	• **Professionalism –** Includes the elements of adherence to ethical principles, effective interactions with patients and with people who are important to those patients, effective interactions with other people working within the health system, reliability, and

Definition	commitment to autonomous maintenance and continuous improvement of competence and citizenship and professional engagement.[52,53] • **Oath of a Pharmacist** was revised in 2021.[9]

Table 4. Entrustment Scale for Entrustable Professional Activities*

Level	Description
Observe only	Learner is permitted to observe only. Even with direct supervision, learner is not entrusted to perform the activity or task.
Direct Supervision	Learner is entrusted to perform the activity or task with direct and proactive supervision. Learner must be observed performing task in order to provide immediate feedback.
Reactive Supervision	Learner is entrusted to perform the activity or task with indirect and reactive supervision. Learner can perform task without direct supervision by may request assistance. Supervising pharmacist is quickly available on site. Feedback is provided immediately after completion of activity or task.
Intermittent Supervision	Learner is entrusted to perform the activity or task with supervision at a distance. Learner can independently perform task. Learner meets with supervising pharmacist at periodic intervals. Feedback is provided regarding overall performance based on sample of work.
General Direction	Learner is entrusted to independently decide what activities and tasks need to be performed. Learner entrusted to direct and supervise activities of others. Learner meets with supervising pharmacist at periodic intervals. Feedback is provided regarding overall performance based on broad professional expectations and organizational goals.

*Table adapted from reference 3. The expected performance level upon graduation from a PharmD program should be reactive supervision. Example entrustment scales with sub-levels that can be used to provide early learners additional feedback can be found in references 18-19.[3,18,19]

Figure 1. The Pharmacists' Patient Care Process[8]

References

1. Medina MS, Plaza CM, Stowe CD. Center for the Advancement of Pharmacy Education 2013 educational outcomes. *Am J Pharm Educ.* 2013;77(8):162.
2. Medina MS. Using the 3 e's (emphasis, expectations, and evaluation) to structure writing objectives for pharmacy practice experiences. *Am J Health-Sys Pharm*. 2010;67(7):516-521. doi: https://doi.org/10.2146/ajhp090227
3. Haines ST, Gleason BL, Kantorovich A, et al. Report of the 2015-2016 Academic Affairs Standing Committee. *Am J Pharm Educ.* 2016;80(9):S20. doi: https://doi.org/10.5688/ajpe809S20.
4. Haines ST, Pittenger AL, Stolte SK, et al. Core entrustable professional activities for new pharmacy graduates. *Am J Pharm Educ.* 2017;81(1):S2. doi: https://doi.org/10.5688/ajpe811S2.
5. ten Cate O. Nuts and bolts of entrustable professional activities. *J Grad Med Educ*. 2013;5(10:157-158. doi: https://doi.org/10.4300/JGME-D-12-00380.1
6. Persky AM, Fuller KA, ten Cate O. True entrustment decisions regarding entrustable professional activities happen in the workplace, not in the classroom setting. *Am J Pharm Educ.* 2021;85(5):8536. doi: https://doi.org/10.5688/ajpe8536
7. Pittenger AL, Chapman SA, Frail CK, et al. Entrustable professional activities for pharmacy practice. *Am J Pharm Educ.* 2016;80(4):57. doi: https://doi.org/10.5688/ajpe80457
8. Joint Commission of Pharmacy Practitioners. The Pharmacists' Patient Care Process. https://jcpp.net/patient-care-process/ Accessed November 11, 2022.
9. American Pharmacists Association. Revised 2021-2022 Oath of a Pharmacist. https://www.pharmacist.com/About/Oath-of-a-Pharmacist. Accessed November 11, 2022.
10. National Association of Boards of Pharmacy. NAPLEX Competency Statements 2021. https://nabp.pharmacy/programs/examinations/naplex/competency-statements-2021/. Accessed October 23, 2022.
11. Interprofessional Education Collaborative. Core Competencies for Interprofessional Collaborative Practice 2016. https://ipec.memberclicks.net/assets/2016-Update.pdf Accessed November 11, 2022.
12. Crismon ML, Allen D, DiPiro JT, Brazeau G, Meyer SM, Lau V. Council of Deans Report, July 2014. *Am J Pharm Educ*. 2014;78(9):Article S17. doi: https://doi.org/10.5688/ajpe789S17
13. Welch BE, Arif SA, Bloom TJ. Report of the 2019-2020 AACP Student Affairs Standing Committee. *Am J Pharm Educ.* 2020;84(10):8198. doi: https://doi.org/10.5688/ajpe8198
14. Janke KK, Bloom TJ, Boyce EG, et al. A pathway to professional identity formation: Report of the 2020-2021 AACP Student Affairs Standing Committee. *Am J Pharm Educ*. 2021;85(10):8714. doi: https://doi.org/10.5688/ajpe8714
15. Castleberry AN, Medina MS, Persky A, Schlesselman LS. Strategies for measuring advances in pharmacy student learning. *Am J Pharm Educ*. 2022;86(4):8707. doi: https://doi.org/10.5688/ajpe8707
16. American Council for Pharmacy Education. Appendix 1 in Accreditation standards and key elements for the professional program in pharmacy leading to the doctor of pharmacy degree. 2015. https://www.acpe-accredit.org/pdf/Standards2016 FINAL.pdf. Accessed November 11, 2022.

17. Rekman J, Hamstra SJ, Dudek N, Wood T, Seabrook C, Gofton W. A new instrument for assessing resident competence in surgical clinic: The Ottawa Clinic Assessment Tool. *J Surg Educ.* 2016;73(4):575-82. doi: 10.1016/j.jsurg.2016.02.003.
18. Jarrett JB, Goliak KL, Haines ST, Trolli E, Schwartz A. Development of an entrustment-supervision assessment tool for pharmacy education using stakeholder focus groups. *Am J Pharm Educ*. 2022;86(1):8523. doi: https://doi.org/10.5688/ajpe8523
19. Chen CH, van den Broek WE Sjoukie, ten Cate O. The case for use of entrustable professional activities in undergraduate medical education. *Acad Med*. 2015;90(4):431-36. doi: 10.1097/ACM.0000000000000586
20. Food and Drug Administration. What is digital health? https://www.fda.gov/medical-devices/digital-health-center-excellence/what-digital-health accessed October 23, 2022.
21. Bransford JD, Stein BS*. The Ideal Problem Solver: A Guide for Improving Thinking, Learning, and Creativity. 2nd ed.* New York, NY*:* W.H. Freeman*;* 1993*.*
22. Facione PA*. Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction. Millbrae, CA: American Philosophical Association; 1990.*
23. Persky et al. Developing critical thinking skills in pharmacy students. *Am J Pharm Educ*. 2019;83(2):7033. doi: https://doi.org/10.5688/ajpe7033
24. MJV Innovations. Five steps to implementing an innovative mindset in your business. https://www.mjvinnovation.com/blog/innovation-mindset-in-your-business/#. Accessed November 11, 2022.
25. Beardsley RS, Skrabal M, Kimberlin CL. *Communication skills in pharmacy practice*, 7th edition. 2019. Wolters Kluwer Health.
26. American Psychological Association. Understanding educational psychology. https://www.apa.org/education-career/guide/subfields/teaching-learning Accessed October 23, 2022.
27. Lekas HM, Pahl K, Fuller Lewis C. Rethinking cultural competence: Shifting to cultural humility. *Health Services Insights*. 2020;13. doi: https://doi.org/10.1177/11786329209705
28. Melino K. Structural competency in health care. *Nurs Clin N Am.* 2022;57(3):433-441. doi: 10.1016/j.cnur.2022.04.009
29. Center for Diseaese Control and Prevention. Health disparities. https://www.cdc.gov/healthyyouth/disparities/index.htm Accessed November 11, 2022.
30. Carter N, Valaitis RK, Lam A, Feather J, Nicholl J, Cleghorn L. Navigation delivery models and roles of navigators in primary care: A scoping literature review. *BMC Health Serv Res*. 2018;18:96. doi: https://doi.org/10.1186/s12913-018-2889-0
31. Metzl JM, Hansen H. Structural competency: theorizing a new medical engagement with stigma and inequality. *Social Science & Medicine*. 2014;103:126-133. doi: 10.1016/j.cnur.2022.04.009
32. Office of Disease Prevention and Health Promotion. Healthy People 2030 Social Determinants of Health. https://health.gov/healthypeople/priority-areas/social-determinants-health. Accessed November 11, 2022.
33. Santana MJ, Manalili K, Jolley RJ, Zelinsky S, Quan H, Lu M. How to practice person-centered care: A conceptual framework. *Health Expect*.2018;21(2):429-440. doi: 10.1111/hex.12640

34. Starfield B. Is patient-centered care the same as person-focused care? *Perm J.* 2011;15(2):63-69. doi: 10.7812/tpp/10-148
35. National Institutes of Health; National Center for Complementary and Integrative Health. Whole person health: What you need to know. https://www.nccih.nih.gov/health/whole-person-health-what-you-need-to-know. Accessed November 11, 2022.
36. Medicine Clof. Defining primary care: An interim report. An Interim Report |The National Academies Press. https://nap.nationalacademies.org/catalog/9153/defining-primary-care-an-interim-report. Published January 1, 1994. Accessed November 11, 2022.
37. Ericson KA. *The road to excellence: The acquisition of expert performance in the arts, science*. Mahwah, NJ: Lawrence Erlbaum Associates; 1996.
38. Gold RS, Miner KR. Report on the 2000 Joint Committee on Health Education and Promotion Terminology. *J Sch Health*. 2002;72(1):3-7. doi: 10.1111/j.1746-1561.2002.tb06501.x
39. Galer-Unti RA, Tappe MK, Lachenmayr S. Advocacy 101: Getting started in health education advocacy. *Health Prom Pract*. 2004;5(3):280-88. Doi: 10.1177/1524839903257697
40. Bzowyckyj AS, Janke KK. A consensus definition and core competencies for being an advocate for pharmacy. *Am J Pharm Educ.* 2013; 77(2): Article 24. Doi: 10.5688/ajpe77224
41. McFarland MS, Finks SW, Smith L, Buck ML, Ourth H, Brummel A. Medication optimization: Integration of comprehensive medication management into practice. *Am Health Drug Benefits*. 2021;14(3):111-114. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8845520/
42. Hoffmann TC, Montori VM, Del Mar C. The connection between evidence-based medicine and shared decision making. J*AMA*. 2014;312(13):1295-1296. doi: 10.1001/jama.2014.10186
43. Collaboration between community-based pharmacy-based and clinic-based pharmacists to achieve medication optimization. Consensus guiding statements from ACCP, CPESN USA, and NCPA Innovation Center. *J Am Coll Clin Pharm*. 2019;2:447-448. doi: https://doi.org/10.1002/jac5.1157
44. Institute for Safe Medication Practices. Key elements of medication use. https://www.ismp.org/key-elements-medication-use Accessed October 23, 2022.
45. Association of American Medical Colleges Medical Informatics Panel and the Population Health Perspective Panel. Contemporary issues in medical informatics and population health: Report II of the Medical School Objectives Project. *Acad Med*. 1999;74(2):130-141.
46. Zgarrick DP. Chapter 2. Management functions. In Zgarrick DP, Alston GL, Moczygemba LR, Desselle SP. *Pharmacy Management Essentials for all Practice Settings,* 5th ed. New York:McGraw Hill; 2020.
47. Fincham JE. Leaders or managers for difficult times. *Am J Pharm Educ*.2009;73(2):Article 29.
48. Flavell JH. Metacognition and cognitive monitoring: a new area of cognitive-developmental inquiry. *Am Psychol.* 1979;34(10):906-911.
49. Medina MS, Castleberry AN, Persky AM. Strategies for improving metacognition in health professions education. *Am J Pharm Educ.* 2017;81(4):78. doi: https://doi.org/10.5688/ajpe81478
50. Payakachat N, Gubbins PO, Ragland D, Norman SW, Flowers SK, et al. Academic help-seeking behavior among student pharmacists. *Am J Pharm Educ*. 2013;77(1):Article 7.
51. Goleman D. *Emotional Intelligence: Why it can matter for than IQ*. New York: Bantam Books; 1995.

52. Wilkinson T, Wade W, Knock LD. A blueprint to assess professionalism: Results of a systematic review. *Acad Med.* 2009;84(5):551-558.
53. Kelley KA, Stanke LD, Rabi SM, Kuba SE, Janke KK. Cross-Validation of an instrument for measuring professionalism behaviors. Am J Pharm Educ. 2011; 75(9):179. doi: 10.5688/ajpe759179

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SPECIAL ARTICLES

Center for the Advancement of Pharmacy Education 2013 Educational Outcomes

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An initiative of the Center for the Advancement of Pharmacy Education (formerly the Center for the Advancement of Pharmaceutical Education) (CAPE), the CAPE Educational Outcomes are intended to be the target toward which the evolving pharmacy curriculum should be aimed. Their development was guided by an advisory panel composed of educators and practitioners nominated for participation by practitioner organizations. CAPE 2013 represents the fourth iteration of the Educational Outcomes, preceded by CAPE 1992, CAPE 1998 and CAPE 2004 respectively. The CAPE 2013 Educational Outcomes were released at the AACP July 2013 Annual meeting and have been revised to include 4 broad domains, 15 subdomains, and example learning objectives.

Keywords: CAPE, educational outcomes

CAPE BACKGROUND AND 2013 REVISION PROCESS

CAPE 2013 represents the fourth version (preceded by panels in 1992, 1998 and 2004) of educational outcomes created to guide curricular discussions of faculty and preceptors within the academy and curriculum planning, delivery, and assessment within colleges and schools of pharmacy.[1,2] CAPE will be established as an active Center within the Association, in recognition of the key role the CAPE Educational Outcomes continue to play in the evolution of pharmacy education. Revision of the CAPE 2004 Educational Outcomes was recommended by the 2010-2011 AACP Academic Affairs Standing Committee and the AACP Board of Directors commissioned the CAPE 2013 panel in the spring of 2012.[3] The CAPE 2013 panel was charged to review and revise the CAPE Educational Outcomes to ensure that the outcomes are relevant and consistent with emerging scientific and clinical developments and practitioner roles. Melissa S. Medina,

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EdD (University of Oklahoma) was selected to chair the panel and Cecilia M. Plaza, PharmD, PhD, served as AACP staff liaison. The Panel was comprised of representation from 8 Joint Commission Pharmacy Practitioners member organizations and 7 AACP appointees listed in Table 1.

To guide their work, the CAPE 2013 panel used literature from pharmacy and other health professions to provide evidence-based revisions. The panel gained additional perspectives from other health professions when they met representatives from the Interprofessional Education Collaborative (IPEC) organizations including Association of American Medical Colleges (AAMC), American Association of Colleges of Osteopathic Medicine (AACOM), American Association of Colleges of Nursing (AACN), and American Dental Education Association (ADEA), American Association of Colleges of Pharmacy (AACP), as well as a patient care advocate. The panel also sought input regarding the revision from the pharmacy academy through focus groups at the AACP 2012 Annual and 2013 Interim meetings. The detailed methodology used in the development of CAPE 2013 can be found in the 2012-13 Academic Affairs Standing Committee report.[4] Through these meetings, general themes and suggestions emerged that have helped shape the revision process. Specifically, the majority of feedback called for:

- Continued commitment to a firm grounding in the science of the profession,
- Inclusion of an affective domain that would address personal and professional skills, attitudes and attributes required for the delivery of patient-centered care,
- Emphasis on what is unique to pharmacists and their role in healthcare,
- Enhanced clarity of terminology that aligns with the core content and language of other health professions,
- Outcomes that are forward thinking and aspirational, yet achievable and measurable,
- Creation of example learning objectives for each subdomain to guide programs in curricular revision and assessment
- Minimization of redundancy in outcomes within the document.

Preamble

The CAPE 2013 Educational Outcomes were created by focusing on the end of the Doctor of Pharmacy program and the knowledge, skills, and attitudes entry-level graduates should possess. They are designed to define for the academy and other health professions the curricular priorities of the Doctor of Pharmacy programs. The CAPE 2013 Educational Outcomes provide a structured framework for promoting and guiding curricular change, inspiring innovation, meeting challenges facing pharmacy education, and mapping and measuring programmatic outcomes. They are aspirational and emphasize increased program expectations; motivating educators and students alike to strive for the highest level of professional prepa-

Table 1. CAPE 2013 Panel Members

AACP Appointees	JCPP Appointees[a]
Melissa S. Medina, EdD, Chair, The University of Oklahoma, College of Pharmacy	ACPE Appointee: Victoria F. Roche, PhD, Creighton University, School of Pharmacy and Health Professions
Cecilia M. Plaza, PharmD, PhD, Staff Liaison, American Association of Colleges of Pharmacy	ACCP Appointee: Brenda L. Gleason, PharmD, St. Louis College of Pharmacy
Cindy D. Stowe, PharmD, University of Arkansas for Medical Sciences, College of Pharmacy	APhA Appointee: Mark N. Strong, PharmD, Northern Navajo Medical Center, Indian Health Service
Evan T. Robinson, PhD, Western New England University, College of Pharmacy	AMCP Appointee: Amanda Bain, PharmD, MPH, The Ohio State University Health Plan, Inc
Gary E. DeLander, PhD, Oregon State University, College of Pharmacy	ASHP Appointee: Gerald E. Meyer, PharmD, MBA, Thomas Jefferson University, Jefferson School of Pharmacy
Diane E. Beck, PharmD, University of Florida, College of Pharmacy	NABP Appointee: Betty J. Dong, PharmD, University of California at San Francisco, School of Pharmacy
Russell B. Melchert, PhD, University of Missouri-Kansas City, School of Pharmacy	NASPA Appointee: Jeffrey Rochon, PharmD, Washington Pharmacists Association
Robert B. Supernaw, PharmD, Wingate University, School of Pharmacy	NCPA Appointee: Patty Johnston, RPh, Colony Drug and Wellness Center

[a] Joint Commission of Pharmacy Practitioners (JCPP) appointees where nominated from the following JCPP members: the American Association of Colleges of Pharmacy (AACP), the Accreditation Council for Pharmacy Education (ACPE), the American College of Clinical Pharmacy (ACCP), the American Pharmacists Association (APhA), the Academy of Managed Care Pharmacy (AMCP), the American Society of Health-System Pharmacists (ASHP), the National Association of Boards of Pharmacy (NABP), the National Alliance of State Pharmacy Associations (NASPA), and the National Community Pharmacists Association (NCPA)

ration. They are also intended to be achievable by the end of the professional program and measurable within academic and practice environments that are evolving to meet a changing healthcare system.

CAPE 2013 was intentionally expanded beyond knowledge and skills to include the affective domain, in recognition of the importance of professional skills and personal attributes to the practice of pharmacy. The change emphasizes the mindset of self-awareness, innovation, leadership, and professionalism needed for pharmacy practice. The affective domain bridges foundational scientific knowledge with essential skills and approaches to practice and care. It also highlights that a concentration in any singular domain alone is insufficient for graduates to practice at the highest level of the profession. Instead, this expanded scope is essential for pharmacists to be able to transform their knowledge and skills into positive outcomes in all professional settings. Reexamination of programmatic educational outcomes in context of this revision should include attention to admissions as this examination is critical to assure candidates are prepared to advance in all essential domains of the professional program. Attention should also be paid to integrated assessments to ensure that students are retaining, integrating, and applying the knowledge, skills, and attitudes.

The outcomes were purposefully constructed around 4 broad domains to guide the academy in educating pharmacists who possess: 1) foundational knowledge that is integrated throughout pharmacy curricula, 2) essentials for practicing pharmacy and delivering patient-centered care, 3) effective approaches to practice and care, and 4) the ability to develop personally and professionally.

The 4 broad domains of CAPE 2013 are divided into 15 specific subdomains. The subdomain outcome statements are designed to capture what students should be capable of upon graduation from a Doctor of Pharmacy program. A one word descriptor in parenthesis is provided for each subdomain that illustrates the main construct and can be used to concisely articulate the outcome. In addition to the 15 subdomain outcome statements, example student learning objectives for each subdomain have been developed to guide programs in curricular revision and assessment. The domains, subdomains, and example learning objectives are coded with a numbering system to increase clarity. The depth and delineation of the example learning objectives allows for mission specific needs of individual institutions to be met at the programmatic level. Colleges or schools are encouraged to expand or edit these example learning objectives to meet local needs, as these are *not* designed to be prescriptive. To illustrate this flexibility, an example of expanded learning objectives has been provided in Table 2. To provide clarity of terms used in the outcome statements and learning objectives a glossary was created, see Table 3. The terms defined in the glossary are bolded and italicized in the CAPE 2013 document.

Overall, an essential premise of CAPE 2013 is that pharmacists now and of the future must be capable of functioning collaboratively as members of an interprofessional team, advocating for patients and demonstrating leadership, providing care for diverse patient populations, contributing to the health and wellness of individuals and communities, educating a broad range of constituents, and effectively managing a highly technical workplace. CAPE 2013 is designed to represent all areas of pharmacy and guide the academy's efforts to educate Doctor of Pharmacy students.

EDUCATIONAL OUTCOMES

Domain 1 – Foundational Knowledge

1.1. Learner (Learner) - Develop, integrate, and apply knowledge from the foundational sciences (i.e., pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care.

Examples of Learning Objectives (colleges or schools are encouraged to expand or edit these example learning objectives to meet local needs, as these are not designed to be prescriptive):*

- 1.1.1. Develop and demonstrate depth and breadth of knowledge in pharmaceutical, social/behavioral/administrative, and clinical sciences.
- 1.1.2. Articulate how knowledge in foundational sciences is integral to clinical reasoning; evaluation of future advances in medicine; supporting health and wellness initiatives; and delivery of contemporary pharmacy services.
- 1.1.3. Integrate knowledge from foundational sciences to explain how specific drugs or drug classes work and evaluate their potential value in individuals and populations.
- 1.1.4. Apply knowledge in foundational sciences to solve therapeutic problems and advance patient-centered care.
- 1.1.5. Critically analyze scientific literature related to drugs and disease to enhance clinical decision making.
- 1.1.6. Identify and critically analyze emerging theories, information, and technologies that may impact patient-centered and population based care.

Domain 2 – Essentials for Practice and Care

2.1. Patient-centered care (Caregiver) - Provide patient-centered care as the medication expert (collect and interpret

evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).

Examples of Learning Objectives:*

2.1.1. Collect subjective and objective evidence related to patient, medications, allergies/adverse reactions, and disease, by performing patient assessment (including physical assessment) from chart/electronic health records, pharmacist records and patient/family interviews.
2.1.2. Interpret evidence and patient data.
2.1.3. Prioritize patient needs.
2.1.4. Formulate evidence based care plans, assessments, and recommendations.
2.1.5. Implement patient care plans.
2.1.6. Monitor the patient and adjust care plan as needed.
2.1.7. Document patient care related activities.

2.2. Medication use systems management (Manager) - Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

Examples of Learning Objectives:*

2.2.1. Compare and contrast the components of typical medication use systems in different pharmacy practice settings.
2.2.2. Describe the role of the pharmacist in impacting the safety and efficacy of each component of a typical medication use system (i.e., procurement, storage, prescribing, transcription, dispensing, administration, monitoring, and documentation).
2.2.3. Utilize technology to optimize the medication use system.
2.2.4. Identify and utilize human, financial, and physical resources to optimize the medication use system.
2.2.5. Manage healthcare needs of patients during transitions of care.
2.2.6. Apply standards, guidelines, best practices, and established processes related to safe and effective medication use.
2.2.7. Utilize continuous quality improvement techniques in the medication use process.

2.3. Health and wellness (Promoter) - Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

Examples of Learning Objectives:*

2.3.1. Describe systematic preventive care, using risk assessment, risk reduction, screening, education, and immunizations.
2.3.2. Provide prevention, intervention, and educational strategies for individuals and communities to improve health and wellness.
2.3.3. Participate with ***interprofessional*** healthcare team members in the management of, and health promotion for, all patients.
2.3.4. Evaluate personal, social, economic, and environmental conditions to maximize health and wellness.

2.4. Population-based care (Provider) - Describe how population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.

Examples of Learning Objectives:*

2.4.1. Assess the healthcare status and needs of a targeted patient population.
2.4.2. Develop and provide an evidence-based approach that considers the cost, care, access, and satisfaction needs of a targeted patient population.
2.4.3. Participate in ***population health management*** by evaluating and adjusting interventions to maximize health.

Domain 3 - Approach to Practice and Care

3.1. Problem Solving (Problem Solver) – Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

Examples of Learning Objectives:*

3.1.1. Identify and define the primary problem.
3.1.2. Define goals and alternative goals.
3.1.3. Explore multiple solutions by organizing, prioritizing, and defending each possible solution.
3.1.4. Anticipate positive and negative outcomes by reviewing assumptions, inconsistencies, and unintended consequences.
3.1.5. Implement the most viable solution, including monitoring parameters, to measure intended and unintended consequences.
3.1.6. Reflect on the solution implemented and its effects to improve future performance.

3.2. Educator (Educator) – Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.

Examples of Learning Objectives:*

3.2.1. Conduct a learning needs assessment of constituents who would benefit from pharmacist-delivered education (e.g., patients/caregivers,

technicians and interns, pharmacy students, fellow pharmacists, other healthcare providers, legislators).

3.2.2. Select the most effective techniques/strategies to achieve learning objectives.

3.2.3. Demonstrate the ability to coordinate educational efforts with other healthcare providers, when appropriate, to ensure a consistent, comprehensive, and team-based encounter.

3.2.4. Ensure instructional content contains the most current information relevant for the intended audience.

3.2.5. Adapt instruction and deliver to the intended audience.

3.2.6. Assess audience comprehension.

3.3. Patient Advocacy (Advocate) - Assure that patients' best interests are represented.

Examples of Learning Objectives:*

3.3.1. Empower patients to take responsibility for, and control of, their health.

3.3.2. Assist patients in navigating the complex healthcare system.

3.3.3. Ensure patients obtain the resources and care required in an efficient and cost-effective manner (e.g., triage to social and/or other healthcare services).

3.4. Interprofessional collaboration (Collaborator) – Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

Examples of Learning Objectives:*

3.4.1. Establish a climate of shared values and mutual respect necessary to meet patient care needs.

3.4.2. Define clear roles and responsibilities for team members to optimize outcomes for specific patient care encounters.

3.4.3. Communicate in a manner that values team-based decision making and shows respect for contributions from other areas of expertise.

3.4.4. Foster accountability and leverage expertise to form a highly functioning team (one that includes the patient, family, and community) and promote shared patient-centered problem solving.

3.5. Cultural sensitivity (Includer) - Recognize social determinants of health to diminish disparities and inequities in access to quality care.

Examples of Learning Objectives:*

3.5.1. Recognize the collective identity and norms of different cultures without overgeneralizing (i.e., recognize and avoid biases and stereotyping).

3.5.2. Demonstrate an attitude that is respectful of different cultures.

3.5.3. Assess a patient's health literacy and modify communication strategies to meet the patient's needs.

3.5.4. Safely and appropriately incorporate patients' cultural beliefs and practices into health and wellness care plans.

3.6. Communication (Communicator) – Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization.

Examples of Learning Objectives:*

3.6.1. Interview patients using an organized structure, specific questioning techniques (e.g., motivational interviewing), and medical terminology adapted for the audience.

3.6.2. Actively listen and ask appropriate open and closed-ended questions to gather information.

3.6.3. Use available technology and other media to assist with communication as appropriate.

3.6.4. Use effective interpersonal skills to establish rapport and build trusting relationships.

3.6.5. Communicate assertively, persuasively, confidently, and clearly.

3.6.6. Demonstrate empathy when interacting with others.

3.6.7. Deliver and obtain feedback to assess learning and promote goal setting and goal attainment.

3.6.8. Develop professional documents pertinent to organizational needs (e.g., monographs, policy documents).

3.6.9. Document patient care activities clearly, concisely, and accurately using appropriate medical terminology.

Domain 4 – Personal and Professional Development

4.1. Self-awareness (Self-aware) – Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

Examples of Learning Objectives:*

4.1.1. Use metacognition to regulate one's own thinking and learning.

Table 2. Example of Expanded Learning Objectives Within a Subdomain

Subdomain	Example Learning Objectives [a]	Example Expanded Learning Objectives [a]
2.2. Medication use systems management (Manager) - Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.	2.2.3. Utilize technology to optimize the medication use system.	• Utilize clinical decision support systems to address alerts (e.g., drug dosing, drug interactions, duplicate therapies). • Locate, retrieve, and organize information needed to manage medication use from the electronic health record. • Use technology to assure safe and accurate medication dispensing, administration, and monitoring.
	2.2.4. Identify and utilize human, financial, and physical resources to optimize the medication use system.	Human Resources • Describe workforce and workflow principles (e.g., recruitment, retention, training, development, evaluation, termination, and other human resources) to create an effective team. Financial Resources • Describe the elements of a pharmacy budget. • Review financial performance (e.g., revenues and expenses). • Describe the key elements of contracts. • Participate in inventory management (e.g., purchasing, storage, inventory tracking, returns, and disposal). • Explain various healthcare payment and risk management systems. Physical Resources • Describe legal requirements for space and equipment within a pharmacy. • Evaluate processes to improve workflow efficiency, effectiveness, and patient safety.

[a] Colleges or schools are encouraged to expand or edit these example learning objectives to meet local needs, as these are not designed to be prescriptive.

4.1.2. Maintain motivation, attention, and interest (e.g., habits of mind) during learning and work-related activities.
4.1.3. Identify, create, implement, evaluate and modify plans for personal and professional development for the purpose of individual growth.
4.1.4. Approach tasks with a desire to learn.
4.1.5. Demonstrate persistence and flexibility in all situations; engaging in help seeking behavior when appropriate.
4.1.6. Strive for accuracy and precision by displaying a willingness to recognize, correct, and learn from errors.
4.1.7. Use constructive coping strategies to manage stress.
4.1.8. Seek personal, professional, or academic support to address personal limitations.
4.1.9. Display positive self-esteem and confidence when working with others.

4.2. Leadership (Leader) - Demonstrate responsibility for creating and achieving shared goals, regardless of position.

Examples of Learning Objectives:*

4.2.1. Identify characteristics that reflect leadership versus management.
4.2.2. Identify the history (e.g., successes and challenges) of a team before implementing changes.
4.2.3. Develop relationships, value diverse opinions, and understand individual strengths and weaknesses to promote teamwork.
4.2.4. Persuasively communicate goals to the team to help build consensus.
4.2.5. Empower team members by actively listening, gathering input or feedback, and fostering collaboration.

4.3. Innovation and Entrepreneurship (Innovator) - Engage in innovative activities by using creative thinking

Table 3. Glossary

Term	Definition
Advocacy	The act or process of supporting a cause, idea, policy, or person(s). [5]
Clinical Sciences	The areas of the professional pharmacy curriculum focused on the integration and application of the foundational sciences (e.g. pharmaceutical and social, administrative, and behavioral sciences) to improve the human condition through the safe and efficacious use medications.[6-7]
Competency	A complex set of behaviors built through the integration of knowledge, skills, and attitudes. A competency is observable, measurable, important, and necessary for the practice of pharmacy.[8-11]
Constructive Coping Strategies	Consciously working to solve personal and interpersonal problems and minimize or tolerate stress .[12]
Culture	Sharing a collective identity, common history and experience, and shared beliefs, values, and norms.[13]
Entrepreneurial skills	Skills that entrepreneurs effectively exhibit such as: decision making, strategic thinking, risk taking, confidence building, communicating ideas, motivating team members, tolerance of ambiguity, taking responsibility for actions.[14-16]
Habits of Mind	*The dispositions that are intentionally used by characteristically successful people when confronted with problems that have no immediately apparent solutions.*[17,18] *These dispositions include:* 1. Persisting 2. Managing impulsivity 3. Listening with understanding and empathy 4. Thinking flexibly 5. Thinking about your thinking, emotions, and biases 6. Striving for accuracy 7. Questioning with critical curiosity; problem posing 8. Applying past knowledge to new situations 9. Thinking and communicating with clarity and precision 10. Attentively gathering data through all senses 11. Creating, imagining and innovating 12. Responding with wonderment and awe 13. Taking responsible risks 14. Finding humor 15. Thinking interdependently 16. Remaining open to continuous learning
Health literacy	One of the social determinants of health referring to the degree to which an individual can obtain and process basic health information to understand and make appropriate health decisions.[19]
Help Seeking	Assessing needs and finding assistance when a deficit is identified that is associated with academic success.[20]
Innovation	The act or process of introducing new ideas, devices, or methods.[21]
Interprofessional	Two or more professions working together collaboratively. Interprofessional is contrasted with the term interdisciplinary, which focuses on when two or more fields within the same profession interact.[22,23]
Leadership	Leadership involves inspiring others. It is a function of knowing yourself, creating a culture of trust and open communication, having a vision that is well communicated, empowering others, taking a broad view of situations, and forming strategic alliances.[24,25]
Management	Identifying, implementing, and overseeing resources to effectively accomplish specific projects or processes.[26]
Medication Use System	A complex process comprised of medication prescribing, order processing, dispensing, administration, and effects monitoring (e.g., intended or unintended effects).[27]

(*Continued*)

Table 3. (*Continued*)

Term	Definition
Metacognition	Knowledge about one's own thinking processes and consciously planning, monitoring, and evaluating learning.[28,29]
Learning Objective	Brief and specific statements that indicate what learners are expected to know or be able to do after taking part in an educational activity. Objectives may be cognitive, affective, or psychomotor.[30]
Learning (Educational) Outcome	Statements that describe what a learner should be able to do at the end of a program.[31]
Patient-centered Care	Any care that is respectful of and responsive to individual patient preferences, needs, and values, and ensures that patient values guide all clinical decisions.[32]
Pharmaceutical Sciences	The integrative science disciplines (e.g., pharmaceutics, pharmacokinetics, pharmacology, toxicology, and medicinal chemistry) taught in the professional pharmacy curriculum that, collectively explain drug actions. The pharmaceutical sciences build on principles introduced in the preprofessional (chemistry, physics, biology) and biomedical (anatomy, physiology, biochemistry) sciences.[33]
Population-based Care	A comprehensive care approach where practitioners assess the health needs of a specific population, implement and evaluate interventions to improve the health of that population, and provide care for individual patients in the context of the culture, health status, and health needs of the populations of which that patient is a member.[34]
Population Health Management	A set of interventions designed to maintain and improve people's health across the full continuum of care—from low-risk, healthy individuals to high-risk individuals with one or more chronic conditions.[35,36]
Social, Behavioral, and Administrative Sciences	The disciplines and concepts of public health, epidemiology, economics, financial management, health behavior, outcomes, biostatistics and research methods, law and ethics, healthcare administration, management, and operations, marketing, communications, medication distribution systems taught within the professional pharmacy curriculum.[37-39]
Social Determinants of Health	Circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness. Examples include age, race/ethnicity, gender, socioeconomic status, health literacy, religious beliefs, disability status, diagnosis, LGBT (ie, lesbian, gay, bisexual, transgender) status, and geography.[40,41]
Transitions of Care	The movement of a patient from one setting of care (e.g., hospital, ambulatory primary care clinic , ambulatory specialty care clinic, long-term care facility, home health, rehabilitation facility) to another.[42,43]

to envision better ways of accomplishing professional goals.

Examples of Learning Objectives:*

4.3.1. Demonstrate initiative when confronted with challenges.
4.3.2. Develop new ideas and approaches to improve quality or overcome barriers to advance the profession.
4.3.3. Demonstrate creative decision making when confronted with novel problems or challenges.
4.3.4. Assess personal strengths and weaknesses in entrepreneurial skills
4.3.5. Apply entrepreneurial skills within a simulated entrepreneurial activity.
4.3.6. Conduct a risk-benefit analysis for implementation of an innovative idea or simulated entrepreneurial activity.

4.4. Professionalism (Professional) - Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

Examples of Learning Objectives:*

4.4.1. Demonstrate altruism, integrity, trustworthiness, flexibility, and respect in all interactions.
4.4.2. Display preparation, initiative, and accountability consistent with a commitment to excellence.
4.4.3. Deliver patient-centered care in a manner that is legal, ethical, and compassionate.
4.4.4. Recognize that one's professionalism is constantly evaluated by others.
4.4.5. Engage in the profession of pharmacy by demonstrating a commitment to its continual improvement.

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REFERENCES

1. Association of Colleges of Pharmacy. *Educational Outcomes 1998*. Alexandria VA: Center for the Advancement of Pharmaceutical Education Outcomes; 1998. http://www.aacp.org/resources/education/cape/Documents/CAPE%20Outcomes%20Document%201998.pdf.
2. American Association of Colleges of Pharmacy. *Educational Outcomes 2004*. Alexandria VA: Center for the Advancement of Pharmaceutical Education Outcomes; 2004. http://www.aacp.org/resources/education/Documents/CAPE2004.pdf.
3. Mason HL, Assemi M, Brown B, et al. Report of the 2010-2011 academic affairs standing committee. *Am J Pharm Educ.* 2011; 75(10): Article S12.
4. Medina MS, Plaza CM, Stowe CD, et al. Report of the 2012-13 Academic Affairs Standing Committee: revising the Center for the Advancement of Pharmacy Education (CAPE) educational outcomes 2013. *Am J Pharm Educ.* 2013; in press.
5. Bzowyckyj AS, Janke KK. A consensus definition and core competencies for being an advocate for pharmacy. *Am J Pharm Educ* 2013;77(2): Article 24.
6. American College of Clinical Pharmacy. The definition of clinical pharmacy. *Pharmacotherapy.* 2008;28(6):816-817.
7. Accreditation Council for Pharmacy Education. Accreditation standards and guidelines for the professional program in pharmacy leading to the doctor of pharmacy degree. 2007. http://www.acpe-accredit.org/pdf/ACPE_Revised_PharmD_Standards_Adopted_Jan152006.pdf. Accessed June 2013.
8. Rowe C. Clarifying the use of competence and competency models in recruitment, assessment and staff development. *Ind Commer Train.* 1995;27(11):12-17.
9. Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting paradigms: from Flexner to competencies. *Acad Med.* 2002;77(5):361-367.
10. Albanese MA, Mejicano G, Mullan P, Kokotailo P, Gruppen L. Defining characteristics of educational competencies. *Med Educ.* 2008;42(3):248-255.
11. Epstein RM, Hundert EM. Defining and assessing professional competence. *JAMA.* 2002;287(2):226-235.
12. Shaikh BT, Kahloon A, Kazmi M, et al. Students, stress, and coping strategies. *Educ Health.* 2004;17(3):346-353.
13. Smith WT, Roth JJ, Okoro O, Kimberlin C, Odedina FT. Disability in cultural competency pharmacy education. *Am J Pharm Educ.* 2011;75(2): Article 26.
14. Vandel JH. Developing a spirit of entrepreneurism and a managerial attitude in students. *Am J Pharm Educ.* 1985;49(4): 371.
15. Gartner WB, Baker T. A plausible history and exploration of Howard Stevenson's definition of entrepreneurship. *Front Entrep Res.* 2010;30(4): Article 2.
16. Brazeau G. Entrepreneurial spirit in pharmacy. *Am J Pharm Educ.* 2013;77(5): Article 88.
17. Habits of Mind. Defining habits of mind: a close look. http://www.habitsofmind.org/content/defining-habits-mind-close-look. Accessed May 2013.
18. Speedie MK, Baldwin JN, Carter RA, Raehl CL, Yanchick VA, Maine LL. Cultivating 'habits of mind' in the scholarly pharmacy clinician: report of the 2011-12 Argus Commission. *Am J Pharm Educ.* 2012;76(6):Article S3.
19. Consumer Health Informatics Research Resources (CHIRr). http://www.chirr.nlm.nih.gov/health-literacy. Accessed June 2013.
20. Payakachat N, Gubbins PO, Ragland D, et al. Academic help-seeking behavior among student pharmacists. *Am J Pharm Educ.* 2013;77(1): Article 7.
21. Merriam-Webster Dictionary Online. Innovation. http://www.learnersdictionary.com/search/Innovation. Accessed May 2013.
22. World Health Organization. Framework for action on interprofessional education & collaborative practice. http://www.who.int/hrh/resources/framework_action/en/. Accessed June 2013.
23. Purden M. Cultural considerations in interprofessional education and practice. *J Interprof Care.* 2005;19(Supplement 1): 224-234.
24. Bennis, W. *On Becoming a Leader.* Reading, MA: Addison-Wesley Publishing Company; 1995.
25. Zgarrick DP. Management functions. In: Desselle SP, Zgarrick DP, Alston GL, eds. *Pharmacy Management: Essentials for All Practice Settings, 3rd edition.* New York: McGraw-Hill; 2012.
26. Fincham JE. Leaders or managers for difficult times. *Am J Pharm Educ.* 2009;73(2): Article 29.
27. Institute for Safe Medication Practices. http://www.ismp.org/faq.asp#Question_3. Accessed May 2013.
28. Flavell, JH. Metacognition and cognitive monitoring. *Am Psychol.* 1979;34(10): 906-911.
29. Garrett J, Alman M, Gardner S, Born C. Assessing students' metacognitive skills. *Am J Pharm Educ.* 2007;71(1): Article 14.
30. Wojtczak, A. Glossary of medical education terms: part 4. *Med Teach.* 2002; 24(5):567-68.
31. National Institute for Learning Outcomes Assessment. Providing evidence of student learning: a transparency framework. http://www.learningoutcomesassessment.org/TFComponentSLOS.htm. Accessed May 2013.
32. Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington, DC: National Academy Press; 2001. http://iom.edu/~/media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf. Accessed May 2013.
33. Pandit NK, Soltis RP. *Introduction to the Pharmaceutical Sciences, 2nd edition.* Philadelphia, PA: Lippincott Williams & Wilkins; 2011.
34. Association of American Medical Colleges, Medical Informatics Panel and the Population Health Perspective Panel. Contemporary issues in medical informatics and population health: report II of the Medical School Objectives Project. *Acad Med.* 1999;74(2):130-141.
35. Zeich R. Patient identification as a key to population health management. *New Med.* 1998;2:109-116.
36. Felt-Lisk S, Higgins T. Exploring the promise of population health management programs to improve health. http://www.mathematica-mpr.com/publications/pdfs/health/PHM_brief.pdf. Accessed May 2013.
37. American Association of Colleges of Pharmacy. Social and administrative sciences section. http://www.aacp.org/governance/SECTIONS/socialadminsciences/Pages/default.aspx. Accessed June 2013.
38. American Pharmacists Association. APhA-APRS Sections. http://www.pharmacist.com/apha-aprs-sections/. Accessed June 2013.
39. Research in Social & Administrative Pharmacy. About RSAP. http://www.rsap.org/. Accessed June 2013.

40. World Health Organization. Social determinants of health: key concepts. http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/index.html. Accessed May 2013.
41. Report of the National Expert Panel on Social Determinants of Health Equity: Recommendations for Advancing Efforts to Achieve *Health Equity*. Atlanta, GA. September 2009. http://www.unnaturalcauses.org/assets/uploads/file/SDOH%20Expert%20Panel%20Report%20final%2009%2025%202009.pdf. Accessed May 2013.
42. National Transitions of Care Coalition. Improving Transitions of care: the vision of the National Transitions of Care Coalition. http://www.ntocc.org/Portals/0/PDF/Resources/PolicyPaper.pdf. Accessed June 2013.
43. Centers for Medicare and Medicaid Services. Eligible professional meaningful use menu set measures. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/downloads/8_Transition_of_Care_Summary.pdf. Accessed May 2013.

Pharmacists' Patient Care Process

May 29, 2014

Joint Commission of Pharmacy Practitioners

The Joint Commission of Pharmacy Practitioners (JCPP) was established in 1977 and serves as a forum on matters of common interest and concern to national organizations of pharmacy practitioners and invited liaison members. JCPP Members are: the Academy of Managed Care Pharmacy, the Accreditation Council for Pharmacy Education, the American Association of Colleges of Pharmacy, the American College of Apothecaries, the American College of Clinical Pharmacy, the American Pharmacists Association, the American Society of Consultant Pharmacists, the American Society of Health-System Pharmacists, the National Alliance of State Pharmacy Associations, the National Association of Boards of Pharmacy, and the National Community Pharmacists Association.

Organizations participating on the Pharmacists' Patient Care Process Workgroup include:

- Academy of Managed Care Pharmacy
- Accreditation Council for Pharmacy Education
- American Association of Colleges of Pharmacy
- American College of Clinical Pharmacy
- American Pharmacists Association
- American Society of Consultant Pharmacists
- American Society of Health-System Pharmacists
- Food Marketing Institute
- National Association of Chain Drug Stores
- National Alliance of State Pharmacy Associations
- National Community Pharmacists Association

The Pharmacists' Patient Care Process is supported by the following organizations:

- Academy of Managed Care Pharmacy
- Accreditation Council for Pharmacy Education
- American Association of Colleges of Pharmacy
- American College of Apothecaries
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- National Community Pharmacists Association

Pharmacists' Patient Care Process

The goal of high quality, cost-effective and accessible health care for patients is achieved through teambased patient-centered care. Pharmacists are essential members of the health care team. The profession of pharmacy is continuing its evolution from a principal focus on medication product distribution to expanded clinically-oriented patient care services. As a result of this professional evolution, the importance of, and need for, a consistent process of care in the delivery of patient care services has been increasingly recognized by the profession at large.

Pharmacists have unique training and expertise in the appropriate use of medications and provide a wide array of patient care services in many different practice settings. These services reduce adverse drug events, improve patient safety, and optimize medication use and health outcomes. Pharmacists contribute to improving patients' health by providing patient care services as authorized under their scope of practice and facilitated by collaborative practice agreements. The foundation for the pharmacist's patient care process is embedded within the pharmaceutical care model developed by Hepler and Strand in the 1990s. However, there is variability in how this process is taught and practiced. To promote consistency across the profession, national pharmacy associations used a consensus-based approach to articulate the patient care process for pharmacists to use as a framework for delivering patient care in any practice setting.

The pharmacists' patient care process described in this document was developed by examining a number of key source documents on pharmaceutical care and medication therapy management.[1-6] Patient care process components in each of these resources were catalogued and compared to create the following process that encompasses a contemporary and comprehensive approach to patient-centered care that is delivered in collaboration with other members of the health care team.

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[1] Cipolle RJ, Strand LM, Morley PC. Pharmaceutical Care Practice: The Patient Centered Approach to Medication Management, 3rd ed. New York: McGraw-Hill; 2012.

[2] McInnis T, Webb CE, Strand LM. The Patient-Centered Medical Home: Integrating Comprehensive Medication Management to Optimize Patient Outcomes, Patient-Centered Primary Care Collaborative, June 2012. Available at: http://www.pcpcc.org/sites/default/files/media/medmanagement.pdf. Accessed May 17, 2014.

[3] American Pharmacists Association; National Association of Chain Drug Stores Foundation. Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model. Version 2.0. J Am Pharm Assoc (2003). 2008;48:341-353.

[4] Bluml BM. Definition of medication therapy management: development of profession wide consensus. J Am Pharm Assoc (2003).2005;45(5):566-72.

[5] Patient Protection and Affordable Care Act, Pub. L. No. 111-148, §2702, 124 Stat. 119, 318-319 (2010). http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/html/PLAW-111publ148.htm. Accessed May 17, 2014.

[6] Council on Credentialing in Pharmacy. Scope of Contemporary Pharmacy Practice: Roles, Responsibilities, and Functions of Pharmacists and Pharmacy Technicians: J Am Pharm Assoc (2003). 2010;50:e35-e69.

Pharmacists' Patient Care Process

Pharmacists use a patient-centered approach in collaboration with other providers on the health care team to optimize patient health and medication outcomes. An essential first step is the establishment of a patient–pharmacist relationship that supports engagement and effective communication with patients, families, and caregivers throughout the process. In addition, at the core of the process, pharmacists continually collaborate, document, and communicate with physicians, other pharmacists, and other health care professionals in the provision of safe, effective, and coordinated care. This process is enhanced through the use of interoperable information technology systems that facilitate efficient and effective communication among all individuals involved in patient care. (Figure 1).

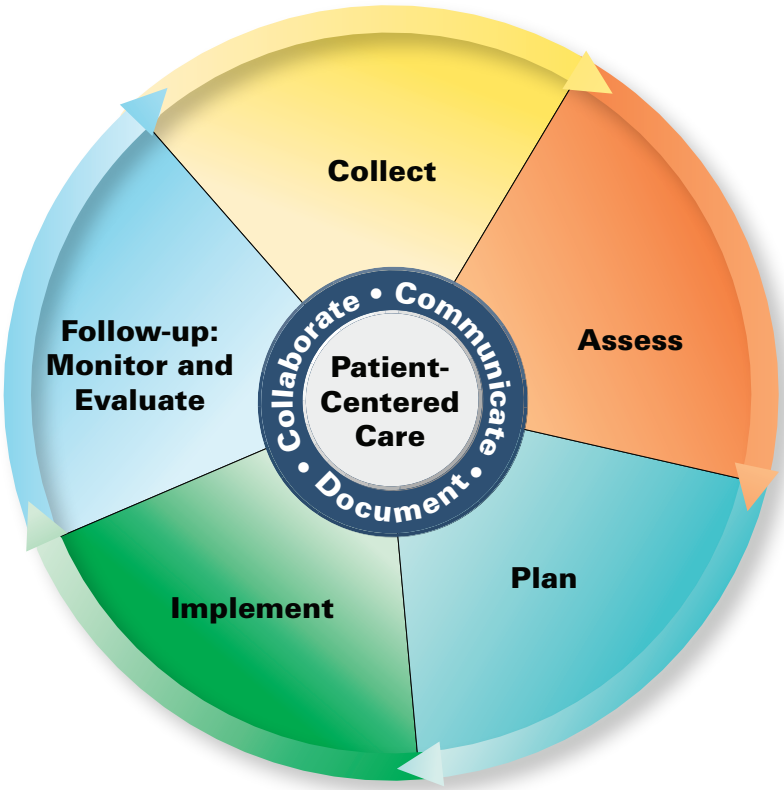

Figure 1: Pharmacists' patient care process

Pharmacists' Patient Care Process
Pharmacists use a patient-centered approach in collaboration with other providers on the health care team to optimize patient health and medication outcomes.

Using principles of evidence-based practice, pharmacists:

Collect
The pharmacist assures the collection of the necessary subjective and objective information about the patient in order to understand the relevant medical/medication history and clinical status of the patient.

Assess
The pharmacist assesses the information collected and analyzes the clinical effects of the patient's therapy in the context of the patient's overall health goals in order to identify and prioritize problems and achieve optimal care.

Plan
The pharmacist develops an individualized patient-centered care plan, in collaboration with other health care professionals and the patient or caregiver that is evidence-based and cost-effective.

Implement
The pharmacist implements the care plan in collaboration with other health care professionals and the patient or caregiver.

Follow-up: Monitor and Evaluate
The pharmacist monitors and evaluates the effectiveness of the care plan and modifies the plan in collaboration with other health care professionals and the patient or caregiver as needed.

Using principles of evidence-based practice, pharmacists:

A. Collect

The pharmacist assures the collection of necessary subjective and objective information about the patient in order to understand the relevant medical/medication history and clinical status of the patient. Information may be gathered and verified from multiple sources including existing patient records, the patient, and other health care professionals. This process includes collecting:

- A current medication list and medication use history for prescription and nonprescription medications, herbal products, and other dietary supplements
- Relevant health data that may include medical history, health and wellness information, biometric test results, and physical assessment findings
- Patient lifestyle habits, preferences and beliefs, health and functional goals, and socioeconomic factors that affect access to medications and other aspects of care

B. Assess

The pharmacist assesses the information collected and analyzes the clinical effects of the patient's therapy in the context of the patient's overall health goals in order to identify and prioritize problems and achieve optimal care. This process includes assessing:

- Each medication for appropriateness, effectiveness, safety, and patient adherence
- Health and functional status, risk factors, health data, cultural factors, health literacy, and access to medications or other aspects of care
- Immunization status and the need for preventive care and other health care services, where appropriate

C. Plan

The pharmacist develops an individualized patient-centered care plan, in collaboration with other health care professionals and the patient or caregiver that is evidence-based and cost-effective. This process includes establishing a care plan that:

- Addresses medication-related problems and optimizes medication therapy
- Sets goals of therapy for achieving clinical outcomes in the context of the patient's overall health care goals and access to care
- Engages the patient through education, empowerment, and self-management
- Supports care continuity, including follow-up and transitions of care as appropriate

D. Implement

The pharmacist implements the care plan in collaboration with other health care professionals and the patient or caregiver. During the process of implementing the care plan, the pharmacist:

- Addresses medication- and health-related problems and engages in preventive care strategies, including vaccine administration
- Initiates, modifies, discontinues, or administers medication therapy as authorized
- Provides education and self-management training to the patient or caregiver
- Contributes to coordination of care, including the referral or transition of the patient to another health care professional
- Schedules follow-up care as needed to achieve goals of therapy

E. Follow-up: Monitor and Evaluate

The pharmacist monitors and evaluates the effectiveness of the care plan and modifies the plan in collaboration with other health care professionals and the patient or caregiver as needed. This process includes the continuous monitoring and evaluation of:

- Medication appropriateness, effectiveness, and safety and patient adherence through available health data, biometric test results, and patient feedback
- Clinical endpoints that contribute to the patient's overall health
- Outcomes of care, including progress toward or the achievement of goals of therapy

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