ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

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

ADOPTED: JANUARY 15, 2006
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Accreditation Council for Pharmacy Education
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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). 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 (one appointment). Since the inception of its accreditation agency recognition program in 1952, ACPE has been recognized continuously by the U.S. Department of Education, and it gained recognition by the Council for Higher Education Accreditation 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[TM] (NAPLEX®).

Transition to the Doctor of Pharmacy as Sole Degree to Enter Practice

After decades of debate, the transition to the Doctor of Pharmacy (PharmD) as the sole professional practice degree for pharmacy in the United States was initiated when ACPE adopted its *Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree* on June 14, 1997. The implementation timeline for the new standards required transition for the entering professional classes in academic year 2000-2001, and the transition was completed in academic year 2004-2005 with the graduation of the last student from an ACPE-accredited baccalaureate in pharmacy program. Many pharmacy colleges and schools converted to the PharmD well in advance of the implementation deadline, and all programs met the implementation timetable.

Revision of Standards: Background

All accrediting bodies, including ACPE, periodically review and revise their standards. A number of environmental factors required 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 1997.
- Feedback from ACPE stakeholders regarding quality improvement of the standards.
- The reports of the Institute of Medicine (www.iom.edu) noting needed changes in our health care system to improve medication safety and patient outcomes, including the five competencies that all health care professionals should attain during their education and training.
- The proliferation, now in more than 40 states, of collaborative health care practice legislation that includes an expanded patient care role for pharmacists.
- The revision of the AACP's Center for the Advancement of Pharmaceutical Education (CAPE) Educational Outcomes in 2004, which was guided by a consultant and an advisory panel composed of educators and practitioners. These educational outcomes are intended to be the target toward which the evolving pharmacy curriculum should be aimed.
- The revision of the NAPLEX® examination blueprint (www.nabp.net) that became effective in early 2005.
- The Medicare Modernization Act of 2003 that establishes the need for medication therapy management services provided by pharmacists for high-risk patients (www.cms.hhs.gov).
- The AACP Academic-Practice Partnership Initiative's *Development of a Profile System to Display Exemplary Pharmacy Practice Experiential Sites* (www.aacp.org/Docs/MainNavigation/Resources/7046_ExemplaryPharmacyPracticeSitesCriteria.pdf).
- The Joint Commission of Pharmacy Practitioners' *Vision of Pharmacy Practice 2015* (Appendix A), accepted by the governing boards of 11 pharmacy organizations, including ACPE, and released in 2005.

Revision of Standards: Process Employed

In March 2003, 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. Based on the feedback received, the first draft of the revised standards was distributed to ACPE stakeholders in February 2005. Subsequently, a series of open hearings was conducted at national pharmacy meetings. Comments received led to further modification of the standards and to development of the revised guidelines. After extensive review of the draft guidelines by an advisory group from various sections of the academic and practice communities, the ACPE Board of Directors approved the distribution to stakeholders of the second draft of the standards

and the first draft of the revised guidelines in late June 2005. Additional open hearings were conducted. Another Web-based survey that allowed anonymous completion by college or school of pharmacy deans and/or their designees was conducted in fall 2005 and additional written feedback was received by ACPE. The revised standards and guidelines were adopted on **January 15, 2006** with an effective date of **July 1, 2007**. The new standards will be referred to as "Standards 2007." Colleges and schools being evaluated by ACPE beginning in academic year **2007-2008** must comply with the new standards and guidelines.

<u>**Revision of Standards: What's Different?**</u>

- *Philosophy and emphasis* – The standards and guidelines, taken together, have been refined to ensure the development of students who can contribute to the care of patients and to the profession by practicing with competence and confidence in collaboration with other health care providers. The revision has placed greater emphasis on the desired scientific foundation and practice competencies, the manner in which programs need to assess students' achievement of the competencies, and the importance of the development of the student as a professional and lifelong learner. The standards focus on the development of students' professional knowledge, skills, attitudes, and values, as well as sound and reasoned judgment and the highest level of ethical behavior. Throughout the revision process, ACPE has focused on addressing the environmental factors noted above in *Revision of Standards: Background.*

- *Standards and guidelines revision processes redefined* – The ACPE Board of Directors decided to separate the review and revision process for the guidelines from that of the standards. The standards will be reviewed approximately every six to eight years, while the guidelines can be refined and improved as needed based on stakeholder feedback and experience.

- *Standards: volume and terminology* – Although the number of standards remains the same as in the previous version, they have been restructured, simplified, and clarified. The standards are organized into six sections, and a preamble introduces the intent and context of each section. The standards now uniformly include the verb "must," indicating an absolute requirement for accreditation. Care has been taken to ensure consistent use and application of terminology.

- *Guidelines: volume and terminology* – The guidelines are provided to help colleges and schools of pharmacy understand the breadth and scope of issues underlying the achievement of each standard. The feedback received from ACPE stakeholders requesting better clarification has resulted in an increase in the number of guidelines. The guidelines employ the verb "must" where matters of quality assurance require that a standards-related issue be addressed in a specific manner. Guidelines employ the verb "should" where guidance or suggestions for quality improvement are provided. Use of the term "in general" recognizes that

not all aspects of the subsequent list will apply in all situations. In those cases, the college or school may choose avenues other than those provided in the guidelines to achieve compliance with the standard. In such cases, ACPE may require a higher burden of proof from the college or school. Some guideline "should" statements may evolve into "must" statements in future revisions. Guidelines annotated with an asterisk (*) provide guidance related specifically, if relevant, to new program initiatives and alternate pathways to degree completion, such as, an accelerated curriculum, a post-baccalaureate in pharmacy Doctor of Pharmacy degree pathway, geographically dispersed campuses, distance-learning activities, and other educational innovations.

- *Footnotes* – the use of footnotes has been expanded to provide definitions or clarification of terms used. They replace the glossary from previous versions of the standards and guidelines.
- *Areas of emphasis* - Based on stakeholder feedback, standards and guidelines in the following areas (listed in alphabetical order) have been emphasized during the revision process:
  a. Communication skills
  b. Curricular content
  c. Evaluation/assessment/outcomes
  d. Experiential education
  e. Faculty and staff matters
  f. Interprofessional teamwork
  g. Patient safety
  h. Professional competencies
  i. Professionalism
  j. Regional accreditation
  k. Scholarship and research
  l. Student admission and progression
- *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 implementation of this revision of the professional degree program standards. Much will be learned in the process that will help drive further revisions of the standards and guidelines. Through its strategic plan, ACPE will simultaneously be investigating opportunities for better and more standardized ways to evaluate the achievement of the standards, including the identification of process and outcome measures to be monitored across all accredited programs. In addition, ACPE will be improving its policies and procedures to allow more 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 15, 2006

Preamble Addendum:

S2007, GUIDELINES 2.0

Purpose
Guidelines 2.0 for ACPE Standards 2007 (S2007) were developed in response to stakeholder feedback for clarifications and to incorporate quality improvement additions and Board adopted interpretation of S2007. The standards remain the same; only selected guidelines on how to achieve specific standards have been clarified or updated. In addition, some appendices to S2007 have been updated based on Board review of stakeholder feedback and a new appendix was added. The next comprehensive review and of the ACPE accreditation standards and guidelines is scheduled for academic year 2013-2014.

Background
With the release of S2007, the ACPE Board announced that updating of guidelines may occur prior to and distinct from a full review and revision of the accreditation standards. Since then, the ACPE staff has received unsolicited suggestions on how specific guidelines could be more clearly stated. In addition, a number of Board interpretations related to S2007 and associated guidelines have been adopted, including: clarification of the hour requirements for introductory pharmacy practice experiences (IPPE) and advanced pharmacy practice experiences (APPE); the need for the majority of IPPE hours to be balanced between community and institutional health system pharmacy practice; and the acceptance of simulations for IPPE. These items are reflected in Guidelines 2.0. In addition, the definition of substantive change has been updated to meet the new United States Department of Education recognition criteria for accreditors.

In fall 2010, a survey of deans, self-study chairs, trained site team visitors, and ACPE Board members and staff, was conducted to determine: "*How can ACPE improve the manner in which compliance with the current PharmD accreditation standards is evaluated by fully accredited colleges and schools of pharmacy and by ACPE evaluation teams?*" Survey responses informed the development of Guidelines 2.0.

A number of references submitted to or reviewed by the ACPE Board contributed to S2007 Guidelines 2.0. These included:
- Recommendation 5 from the 2006-2007 American Association of Colleges of Pharmacy (AACP) Professional Affairs Committee regarding acceleration of interprofessional education.
- IPPE Competency Task Force Report, AACP, July 2009.

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- Resolution of the American Pharmacists Association (APhA), March 2010 regarding sale of cigarettes in experiential pharmacy practice sites.
- Pre-APPE Core Performance Domains and Abilities, AACP, November 2010
- *The Essential Research Curriculum for Doctor of Pharmacy Degree Programs*, American College of Clinical Pharmacy Task Force on Research in the Professional Curriculum, Pharmacotherapy 2010; 30(9):344e-349e.
- Entry-level Competencies Needed for Pharmacy Practice in Hospitals and Health-Systems. ASHP-ACPE Task Force Report: Fall 2010.

There has been increasing emphasis on programmatic performance outcomes, especially student learning outcomes, as a result of national educational accountability forces (i.e., the U.S. Department of Education and the Council on Higher Education Accreditation). Hence, Guidelines 2.0 provides additional focus on competencies, outcomes, and the need for assessment and evaluation. ACPE has studied the activities of other specialized accreditors in this arena in revising the guidelines.

Finally, since 2007, there have been evolving changes in the health care market place, including health care reforms at the state and federal levels. As a result, Guidelines 2.0 have additional focus on interprofessional education to better prepare pharmacy graduates to practice or deliver care in collaborative health care teams. In addition, numerous practice organizations are advocating for enhanced interprofessional training for pharmacists. Corresponding curricular content suggestions in Appendix B have also been updated.

Comments and documents pertaining to the standards in S2007 will be considered during the comprehensive standards/guidelines revision in academic year 2013-2014.

External Review
A panel of external reviewers representing a broad array of institutions and including deans, administrators, self-study chairs, experiential directors and others familiar with ACPE's Standards and Guidelines was identified by the American Association of Colleges of Pharmacy (AACP). This panel reviewed the draft guidelines document and provided comments that were considered in the final approval process for S2007 Guidelines 2.0 by the ACPE Board of Directors. ACPE greatly appreciates the valued contributions of the panel.

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ACPE Board of Directors and Staff
January 23, 2011

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<u>STANDARDS FOR MISSION, PLANNING, AND EVALUATION</u>

The purpose of the standards in this section is to ensure that the college or school's professional degree program has a clearly articulated mission, desired goals, and values, and that a strategic planning process is used to achieve the mission and goals. The college or school must have an evaluation plan, based on assessment measures, that allows for a determination of the degree to which the mission and goals have been achieved. The mission and goals must be related to the vision and needs of the profession of pharmacy to better serve society.

Standard No. 1: College or School Mission and Goals

Standard No. 2: Strategic Plan

Standard No. 3: Evaluation of Achievement of Mission and Goals

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Standard No. 1: College or School Mission and Goals
The college or school of pharmacy *(hereinafter "college or school")* **must have a published statement of its mission, its goals in the areas of education, research and other scholarly activities, service, and pharmacy practice, and its values. The statement must be compatible with the mission of the university in which the college or school operates.[1] These goals must include fundamental commitments of the college or school to the preparation of students who possess the competencies necessary for the provision of pharmacist-delivered patient care, including medication therapy management services, the advancement of the practice of pharmacy and its contributions to society, the pursuit of research and other scholarly activities, and the assessment and evaluation of desired outcomes.**

Guideline 1.1
The college or school's vision for pharmacy practice, research, and education should be aligned with the profession's vision for practice, research, and education.

Guideline 1.2
The college or school should have a vision for education, research, and other scholarly activities that commits faculty and students to fostering innovation through basic and applied research. The research vision should be related to: advancing the basic, clinical, and translational sciences that are the foundations of drug therapy; improving health care outcomes; or applying known/ developing new educational methods. The vision should also include a commitment to participate with other stakeholders in the development of new and improved practice models.

Guideline 1.3
The college or school's vision should include the development of pharmacy graduates who are trained with other health professionals to provide patient care services as a team.

Guideline 1.4
The college or school's visions and goals should provide the basis for strategic planning on how the vision and goals will be achieved. Assessment and evaluation activities should determine how achievement of the vision and goals will be measured and evaluated. Human, financial and other resources for the program should be adequate to address the needs of the strategic and evaluation plans. [See also Standards 2, 3, 24, and 30.]

Guideline 1.5
The college or school's mission statement and goals should address the educational philosophy of the professional degree program in preparing graduates with a thorough

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[1] The term "university" includes independent colleges and schools.

foundation in the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences and their application to practice to enter the pharmacy profession and to contribute positively to its evolution.

Guideline 1.6
The college or school's values should include a stated commitment to a culture that, in general, respects and:

- embraces quality assurance and continuous quality improvement through assessment and evaluation
- encourages innovation in all aspects of its mission
- reflects contemporary pharmacy practice and the vision for its future
- fosters collaboration and good morale among and between administration, faculty, staff, alumni, and students
- fosters involvement of the college or school in mission-related matters of the pharmacy and health care communities and society in general
- supports meeting the varied needs of student learners and preparing them for the continuum of lifelong education
- promotes use of teaching methods shown to enhance student learning
- supports postgraduate professional education and training of pharmacists, such as accredited residencies, fellowships, and graduate programs, including combined degree options
- supports continuing professional development of faculty, staff, preceptors,[2] alumni, and other pharmacists
- supports the educational and scholarly maturation and mentoring of new faculty
- fosters professionalism, ethical behavior, leadership, and scholarship
- encourages diversity of both faculty and students
- supports meeting the needs of diverse stakeholders, including faculty, administrators, staff, students, preceptors, alumni, and others
- attaches importance to scientific advancement
- promotes development of interprofessional learning and collaborative practice in didactic and experiential education

Guideline 1.7*
For new program initiatives and alternate pathways to degree completion, the college or school must ensure that:

- the initiatives are consistent with the university's and college or school's missions and goals

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[2] Preceptors are full-time, part-time, or volunteer faculty or practitioners (usually pharmacists) who serve as practitioner-educators and oversee students in pharmacy practice experiences within the curriculum.

- the same commitment is demonstrated to all students, irrespective of program pathway or geographic location
- resources are allocated in an equitable manner

Standard No. 2: Strategic Plan

The college or school must develop, implement, and regularly revise a strategic plan to facilitate the advancement of its mission and goals. The strategic plan must be developed through an inclusive process that solicits input and review from faculty, students, staff, administrators, alumni, and other stakeholders as needed, have the support of the university administration, and be disseminated in summary form to key stakeholders.

Guideline 2.1
The strategic plan should address short-term (e.g., 3 to 5 years) strategic goals and objectives that are key to the advancement of all aspects of the college or school's mission and goals.

Guideline 2.2
Strategic goals and objectives should differ from the mission and goals of the college or school, as the latter describe the desired outcomes, while the former are steps to achieve the desired outcomes.

Guideline 2.3
In general, strategic planning should:
- be continuous, with systematic broad-based reflection and revision as needed to meet programmatic and educational needs
- consider the use of external facilitators
- strive for awareness of and commitment to the strategic plan by key stakeholders
- be based on examination of present and projected environmental, professional, and programmatic factors
- assess strengths, weaknesses, opportunities, and threats relevant to the college or school
- be aligned with the university's strategic plan
- identify opportunities for beneficial interactions with other health professions and professionals
- be consistent with the college or school's mission statement, goals, and values
- prioritize the strategic goals, objectives, and actions
- define measurable outcomes and the processes to assess achievement of the goals
- establish achievable timelines

- identify the resources (faculty, staff, preceptors, technical, financial, physical) that need to be allocated
- designate responsibilities to appropriate individuals or groups

Guideline 2.4
The college or school should establish ongoing mechanisms for monitoring, evaluating and documenting progress in achieving the goals and objectives of the strategic plan.

Guideline 2.5
Substantive changes[3] contemplated by the college or school must be addressed through its strategic planning process. Planning must take into consideration all resources (including faculty, staff, preceptors, technical, financial, and physical) required to implement the change and the impact of the change on the existing program. The college or school must notify ACPE in advance of the implementation of any substantive change, allowing sufficient time for evaluation of compliance with standards or the need for additional monitoring.

Guideline 2.6*
A substantive change that involves new program initiatives (such as alternate program pathways to degree completion, including geographically dispersed campuses and distance-learning activities) should result from documented needs and be included in the strategic planning process, ensuring adequate lead time for development and proper

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[3] Substantive change involves a substantial modification or expansion or contraction of the nature and scope of an accredited program. ACPE's definition of substantive change includes, but is not limited to: any change in the established mission or goals of the institution or college/school; curricular change that represent a significant departure in either content or method of delivery, from those that were offered during the program's previous accreditation cycle including (development of a non-traditional doctor of pharmacy program; development of a joint delivery of program agreement; use of distance learning technologies or other unique methodologies to deliver a substantial portion of the curriculum, e.g., 25% or higher); a substantial change in enrollment in the professional program (defined as 20% or more in one year or cumulatively over two consecutive years); a substantial change in the number of clock or credit hours required for successful completion of the program; a significant change in the length of the program; the establishment of an additional geographic location at which substantial portions of the program are offered; a substantial change in faculty composition or size; change in the legal status, governance, or ownership of the program, a change in financial resources that could affect the quality of the program; changes in leadership; changes in organizational structure; change in status with other accrediting agency; and any other changes that the Dean feels require notification of ACPE.

notification of ACPE per ACPE policies and procedures. Consultation with ACPE must occur at least six months before recruiting students into new pathways or programs.

Standard No. 3: Evaluation of Achievement of Mission and Goals
The college or school must establish and implement an evaluation plan that assesses achievement of the mission and goals. The evaluation must measure the extent to which the desired outcomes of the professional degree program (including assessments of student learning and evaluation of the effectiveness of the curriculum) are being achieved. Likewise, the extent to which the desired outcomes of research and other scholarly activities, service, and pharmacy practice programs are being achieved must be measured. The college or school must use the analysis of process and outcome measures for continuous development and improvement of the professional degree program.

Guideline 3.1[4]
The evaluation plan must reflect a commitment to quality improvement through a continuous and systematic process of assessment and evaluation covering all aspects of the college or school mission and goals and the accreditation standards. The plan must be evidence-based and embrace the principles and methodologies of continuous quality improvement. The evaluation plan and the specific assessments should be reviewed for completeness, appropriateness, and effectiveness by internal and external stakeholders on an ongoing basis, in a defined manner. The evaluation plan should include the college or school's periodic self-assessment using the accreditation standards and guidelines to assure ongoing compliance.

Guideline 3.2
In general, the evaluation plan should describe the:
- desired outcomes of the college or school's mission and goals, including the educational program(s), research and other scholarly activities, professional and community service, interprofessional education, and pharmacy practice programs
- process and outcome assessments that will be evaluated, and with what frequency
- individual(s) responsible for data collection, analysis, and dissemination
- parties that will be responsible to receive and be authorized to act on the findings
- manner by which resultant changes (e.g., revisions in the curriculum, modifications of faculty and student policies and procedures) will be implemented, evaluated, documented, and communicated
- comparisons that will be made with data from all ACPE-accredited programs and, if desired, a group of peer colleges and schools, with the basis for their selection

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[4] Additional guidance relevant to the evaluation plan is provided under Standards 13, 14, 15, and 17.

- resources (such as, faculty, staff, preceptors, technical, financial, and physical) needed for successful implementation

Guideline 3.3

The evaluation plan must include the use of data from standardized anonymous surveys of graduating students, faculty, preceptors and alumni available from the American Association of College of Pharmacy (AACP) for the evaluation of the program, including student learning and curricular effectiveness (see Standard 15).

Guideline 3.4

In general, the assessments employed in the evaluation plan should:
- include defined formative and summative measures[5]
- address all aspects of the program's mission and goals
- involve the full range of relevant internal and external stakeholders, including faculty, students, staff, preceptors, administrators, and alumni
- permit anonymous input and provide for collective analyses of findings
- be used to evaluate trends over time
- evaluate student achievement of desired competencies, in aggregate and at the level of the individual student
- include, where available, standardized or common instruments and data, such as those available through the American Association of Colleges of Pharmacy (AACP) and the National Association of Boards of Pharmacy (NABP), to allow comparisons with other accredited professional degree programs and peer colleges and schools

Guideline 3.5

The college or school should make available to key stakeholders, on an annual basis, the major findings and actions resulting from its evaluation plan through, for example, a written annual report or through a posting on its Web site.

Guideline 3.6*

The evaluation plan must include a variety of assessments that will allow comparison and establishment of substantial comparability of alternative program pathways to degree completion, including geographically dispersed campuses and distance-learning activities.

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[5] A formative assessment measure is one taken before the activity or program is completed or repeated; an example would be a student's midpoint grade in a course. Formative assessments should allow for corrective actions. A summative assessment measure is one taken at the conclusion of an activity or program; an example would be a student's final grade in a course. Summative assessments help define the degree to which outcomes have been attained.

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STANDARDS FOR ORGANIZATION AND ADMINISTRATION

The purpose of the standards in this section is to ensure that the college or school's organization and support within the university structure, its relationships with other university and external practice and research entities, and its internal organization, leadership, and governance are developed and functioning in a manner that fosters the college or school's mission and goals.

Standard No. 4: Institutional Accreditation

Standard No. 5: College or School and University Relationship

Standard No. 6: College or School and other Administrative Relationships

Standard No. 7: College or School Organization and Governance

Standard No. 8: Qualifications and Responsibilities of the Dean

Standard No. 4: Institutional Accreditation

The institution housing the college or school, or the independent college or school, must have or, in the case of new programs, achieve full accreditation by a regional/institutional accreditation agency recognized by the U.S. Department of Education.

Guideline 4.1

A college or school that is not a component of a regionally accredited institution or is not regionally accredited itself must promptly seek and achieve institutional accreditation from the appropriate regional accrediting body within the prescribed timeframe.[6]

Guideline 4.2

The college or school must report to ACPE, as soon as possible, 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.

Guideline 4.3

In matters of substantive change that affect regional and programmatic accreditation (e.g., the development of a new pharmacy program in a regionally accredited institution), the college or school should ensure joint notification of both accrediting bodies.

Standard No. 5: College or School and University Relationship

The college or school must be an autonomous unit within the university structure and must be led by a dean. To maintain and advance the professional degree program, the university president (or other university officials charged with final responsibility for the college or school) and the dean must collaborate to secure adequate financial, physical (teaching and research), faculty, staff, student, practice site, preceptor, library, technology, and administrative resources to meet all of the ACPE accreditation standards.

Guideline 5.1

The college or school must participate in the governance of the university, in accordance with its policies and procedures.

Guideline 5.2

The college or school must have autonomy, within university policies and procedures and state and federal regulations, in the following areas:

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[6] Some regional accrediting bodies grant "pre-accreditation" as a first step to achieving full accreditation. In such circumstances, the attainment of pre-accreditation status would meet the requirements of this standard. Subsequently, in such cases, achievement and maintenance of full accreditation status would be required in order to continue to meet the requirements of this standard.

- programmatic evaluation
- definition and delivery of the curriculum
- development of bylaws, policies, and procedures
- student admission and progression policies
- faculty and staff recruitment, development, evaluation, and retention

Guideline 5.3
The college or school's reporting relationship(s) must be depicted in the university's organizational chart.

Standard No. 6: College or School and other Administrative Relationships
The college or school, with the full support of the university, must develop suitable academic, research, and other scholarly activity; practice and service relationships; collaborations; and partnerships, within and outside the university, to support and advance its mission and goals.

Guideline 6.1
The relationships, collaborations, and partnerships should advance the desired outcomes of the college or school's mission and goals including student learning, research and other scholarly activities, professional and community service, interprofessional education, and pharmacy practice programs.

Guideline 6.2
In general, the relationships, collaborations, and partnerships collectively should:
- promote integrated and synergistic interprofessional and interdisciplinary activities
- define the interface between the service and educational components
- provide the necessary blend of educational and patient care activities in a variety of practice settings
- strive to meet community needs
- support the development and enhancement of postgraduate education, postgraduate accredited residency and fellowship training, and combined degree options
- ensure that appropriate control and supervision are vested in the college or school
- promote research advancement of the profession
- be developed and maintained with a spirit of mutual service and trust

Guideline 6.3
Formal agreements signed by authorized representatives of the parties should be developed to codify the nature and intent of the relationship, collaboration, or

partnership; the legal liability of the parties; and the financial arrangements (if any). The agreements should provide for periodic collaborative review.

Standard No. 7: College or School Organization and Governance
The college or school must be organized and staffed to facilitate the accomplishment of its mission and goals. The college or school administration must have defined lines of authority and responsibility, foster organizational unit development and collegiality, and allocate resources appropriately. The college or school must have published, updated governance documents, such as bylaws and policies and procedures, which have been generated by faculty consensus under the leadership of the dean in accordance with university regulations.

Guideline 7.1
The college or school's administrative leaders should function as a unified team and be responsible for accomplishing the mission and goals of the college or school. Staff support should be provided for the administrative leaders to ensure their effectiveness. Seminars, programs, mentors, and other activities designed to ensure the growth and development of the administrative capabilities of both the leaders and the team should be provided.

Guideline 7.2
In general, the responsibilities of the administrative leaders – individually or collectively – should include:
- advancing the pharmacy science and practice disciplines, as required by the curriculum and as organized within the college or school
- mentoring, developing, and evaluating the faculty
- ensuring effective development, delivery, and improvement of the curriculum, including oversight and quality assurance of course work and pharmacy practice experiences
- managing operations and budgetary affairs
- fostering research and other scholarly activities
- developing and evaluating interprofessional education and practice opportunities
- fostering a culture of professionalism among faculty, students, and staff
- ensuring that comprehensive and effective systems for assessment and evaluation are in place
- setting, evaluating, and accomplishing goals and objectives consistent with the college or school's mission and goals and as a part of the college or school's systematic planning and evaluation

Guideline 7.3
College or school administrative leaders working with the dean must have credentials and experience that prepare them for their respective roles. They must have clearly defined responsibilities and the authority to discharge their responsibilities. If the college or school organizes its faculty into subunits, such as departments or divisions, subunit goals and objectives must be established that align with the mission and goals of the college or school. The effectiveness of each organizational unit must be evaluated on the basis of its goals and objectives and its contribution to the professional program.

Guideline 7.4
Faculty and staff, where warranted, should be afforded the opportunity and encouraged to participate in the system of governance of the college or school.

Guideline 7.5
Faculty meetings and committees must be part of the system of governance of the college or school. Committees should be established to address key components of the mission and goals. Where appropriate, faculty committees should include staff, students, preceptors, alumni, and pharmacy practitioners. Minutes of faculty meetings and committee actions should be maintained and communicated to appropriate parties.

Guideline 7.6
The college or school should establish and maintain a system of communication with its stakeholders.

Guideline 7.7
In general, the college or school's bylaws, policies, and procedures should address organizational and administrative issues, such as:
- governance of the college or school
- conformity with university bylaws, policies, and procedures
- professional responsibilities
- academic freedom
- research and scholarship
- intellectual property
- employment contracts or letters of appointment and conditions of service
- faculty and staff recruitment, promotion, and, if applicable, tenure
- grievances, including discrimination and harassment
- membership responsibilities and voting rights of the faculty
- officers of the faculty
- faculty meetings and committees
- policy development and adoption
- suspension of rules and amendment of bylaws

- the timeframe for periodic review of the bylaws, policies, and procedures

Guideline 7.8
The college or school must have policies and procedures that address potential systems failures, whether such failures are technical, administrative, or curricular. Contingency planning must include creating secure backups of critical applications and systems data, providing mechanisms for making up lost course work and academic credit, securing alternate means for communication and information delivery, and creating exit strategies to protect students if part or all of a program loses viability.

Guideline 7.9*
Alternate program pathways must be integrated into the college or school's regular administrative structures, policies, and procedures (including planning, oversight, and evaluation), and must be supervised by an administrator who is part of the college or school. The college or school must ensure that workflow and communication among administration, faculty, staff, preceptors, and students engaged in distance-learning activities are maintained. The college or school must retain ultimate responsibility for the academic quality and integrity of distance-learning activities and the achievement of expected and unexpected outcomes, regardless of any contractual arrangements, partnerships, or consortia for educational or technical services.

Standard No. 8: Qualifications and Responsibilities of the Dean
The dean must be qualified to provide leadership in pharmacy professional education and practice, including research, scholarly activities, and service. The dean must be the chief administrative and academic officer and have direct access to the university president or other university officials delegated with final responsibility for the college or school. The dean must unite and inspire administrators, faculty, staff, preceptors, and students toward achievement of the mission and goals. The dean is responsible for ensuring that all accreditation requirements of the ACPE are met, including the timely submission of all reports and notices of planning for substantive changes.

Guideline 8.1
To provide leadership in accomplishing the mission and goals of the college or school, the qualifications and characteristics of a dean must include:
- a degree in pharmacy or a strong understanding of contemporary pharmacy and health care systems
- a scholarly concern for the profession, generally, and for the diverse aspects of pharmacy practice, in particular
- publications in the pharmacy and biomedical literature in areas relevant to the mission and goals of the college or school

- appropriate leadership and managerial skills and experience in the academic (preferred) or health care sectors
- recognition for career accomplishments by pharmacy or other health profession educators, researchers, and practitioners
- strong written and interpersonal communication skills
- experience with and a commitment to systematic planning, assessment, and continuous programmatic improvement
- a thorough understanding of and a commitment to teaching and student learning, including pedagogy
- evidence of a commitment to the advancement of research and scholarship
- the ability and willingness to provide assertive advocacy on behalf of:
  o the college or school to the university administration
  o the college or school and the profession of pharmacy in community, state, and national health care initiatives
- a record of and willingness to continue active participation in the affairs of pharmacy's professional and scientific societies

Guideline 8.2
The dean must have the authority and be responsible for ensuring:
- development, articulation, and implementation of the mission and goals
- acceptance of the mission and goals by the stakeholders
- development, implementation, evaluation, and enhancement of the educational, research, service, and pharmacy practice programs
- collaborative efforts to develop, implement, evaluate, and enhance interprofessional education, practice, service, and research programs
- development and progress of the strategic plan and the evaluation plan, including assessment of outcomes
- recruitment, development, and retention of competent faculty and staff
- initiation, implementation, and management of programs for the recruitment and admission of qualified students
- establishment and implementation of standards for academic performance and progression
- resource acquisition and mission-based allocation
- continuous enhancement of the visibility of the college or school on campus and to external stakeholders
- the effective use of resources to meet the needs and mission of the college or school

Guideline 8.3
To accomplish these responsibilities, the dean must have the assistance and full support of the administrative leaders of the college or school's organizational units and adequate

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staff support. In instances where the dean is assigned other substantial administrative responsibilities within the university, arrangements for additional administrative support to the office of the dean must be made to ensure effective administration of the affairs of the college or school.

Guideline 8.4
The dean must be responsible for compliance with ACPE's accreditation standards, policies, and procedures. In the event that remedial action is required to bring the college or school into compliance, the dean must take the necessary steps to ensure compliance in a timely and efficient manner. In this regard, the dean should seek advice and consultation from ACPE, as needed.

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<u>STANDARDS FOR CURRICULUM</u>

The purpose of the standards in this section is to ensure that the college or school's curriculum provides a thorough foundation in the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences and prepares graduates with the competencies needed to enter and contribute to the profession of pharmacy throughout their career. Desired curricular content, organization, sequencing, and outcomes, and the type and character of practice experiences needed, are described. In addition, the methods of promoting student learning and development of lifelong learning skills and the need to use assessments to measure, evaluate, and improve student learning and effectiveness are stated. As recommended by the Institute of Medicine for all health care professionals, pharmacists must be educated to deliver patient-centered care as members of an interprofessional team, emphasizing evidence-based practice, quality improvement approaches, and informatics.

Standard No. 9: The Goal of the Curriculum

Standard No. 10: Curricular Development, Delivery, and Improvement

Standard No. 11: Teaching and Learning Methods

Standard No. 12: Professional Competencies and Outcome Expectations

Standard No. 13: Curricular Core—Knowledge, Skills, Attitudes, and Values

Standard No. 14: Curricular Core—Pharmacy Practice Experiences

Standard No. 15: Assessment and Evaluation of Student Learning and Curricular Effectiveness

ACCREDITATION STANDARDS AND GUIDELINES FOR THE PROFESSIONAL PROGRAM IN PHARMACY LEADING TO THE DOCTOR OF PHARMACY DEGREE ADOPTED: JANUARY 15, 2006 GUIDELINES 2.0: JANUARY 23, 2011

Standard No. 9: The Goal of the Curriculum

The college or school's professional degree program curriculum must prepare graduates with the professional competencies to enter pharmacy practice in any setting to ensure optimal medication therapy outcomes and patient safety, satisfy the educational requirements for licensure as a pharmacist, and meet the requirements of the university for the degree.

The curriculum must develop in graduates knowledge that meets the criteria of good science;[7] professional skills, attitudes, and values; and the ability to integrate and apply learning to both the present practice of pharmacy and the advancement of the profession. Graduates must be able to identify and implement needed changes in pharmacy practice and health care delivery.

Guideline 9.1
In developing knowledge, skills, attitudes, and values in students, the college or school must ensure that the curriculum fosters the development of professional judgment and a commitment to uphold ethical standards and abide by practice regulations. The college or school must ensure that the curriculum addresses patient safety, cultural appreciation, health literacy, health care disparities, and competencies needed to work as a member of or on an interprofessional team.

Guideline 9.2
In designing its curriculum, the college or school must address the desired didactic content, instructional processes, course delivery, and experiential education.

Guideline 9.3
The college or school curriculum should foster the development of students as leaders and agents of change. The curriculum should help students embrace the moral purpose that underpins the profession and develop the ability to use tools and strategies needed to affect positive change in pharmacy practice and health care delivery.

Standard No. 10: Curricular Development, Delivery, and Improvement

The college or school's faculty must be responsible for the development, organization, delivery, and improvement of the curriculum. The curriculum must define the expected outcomes and be developed, with attention to sequencing and integration of content and the selection of teaching and learning methods and assessments. All curricular pathways must have both *required* and *elective* courses

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[7] "Good science" implies having the following characteristics: evidence-based, logical, convincing, explanatory, honest, testable, and systematic.

and experiences and must effectively facilitate student development and achievement of the professional competencies.

The curriculum for the professional portion of the degree program must be a minimum of four academic years or the equivalent number of hours or credits. The curriculum must include didactic course work to provide the desired scientific foundation, introductory pharmacy practice experiences (not less than 5% of the curricular length) and advanced pharmacy practice experiences (not less than 25% of the curricular length).[8]

Guideline 10.1
On behalf of the faculty, the curriculum committee or equivalent must manage curricular development, evaluation, and improvement to ensure that the curriculum is consistent with the collective vision of the faculty and administration. Student representation must be an integral part of curricular development and improvement. The curriculum must comply with university policies and procedures and the accreditation standards.

Guideline 10.2
The curriculum committee or equivalent must have adequate resources to serve as the central body for the management of orderly and systematic reviews of curricular structure, content, process, and outcomes, based on assessment data. In general, the committee should strive for:

- optimal sequencing, reiteration, and integration of the curricular content and coordinated instruction across organizational lines and faculty disciplines, guided by assessment data of the components and contents of the curriculum to the expected competencies and outcomes
- awareness by faculty of each other's courses (including content, depth, methodologies used, and relationship to adopted curricular competencies and outcomes)
- application and reinforcement of curricular content (e.g., basic science faculty providing applications and examples relevant to practice, and practice faculty stressing the scientific basis for pharmacotherapy)
- provision of a reasonable and balanced course load for students
- availability of sufficient elective courses (within or outside the college or school) and pharmacy practice experiences to allow students to pursue special interests
- the use of proven teaching and learning methodologies and the introduction and evaluation of innovations to promote optimal learning
- consistency of course syllabi, including statements of student learning outcomes and methods of assessment, identification of active learning strategies employed,

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[8] Refer to Standards 13 and 14 and Appendices B, C and D for additional detail and guidance.

and relevance of course content and skills development to desired competencies for graduates
- standardized allocation of appropriate course credit

Guideline 10.3
The learning outcomes for curricular courses and pharmacy practice experiences must be mapped to the desired competencies (see Standard 12). Gaps in competency development or inappropriate redundancies identified in the mapping process should inform curricular revision.

Guideline10.4
The curriculum committee should ensure that curricular design allows for students to be challenged with increasing rigor and expectations as they matriculate through the program to achieve the desired competencies. The curriculum design should enable students to integrate and apply all competency areas needed for the delivery of holistic patient care.

Standard No. 11: Teaching and Learning Methods
The college or school, throughout the curriculum and in all program pathways, must use and integrate teaching and learning methods that have been shown through curricular assessments to produce graduates who become competent pharmacists by ensuring the achievement of the stated outcomes, fostering the development and maturation of critical thinking and problem-solving skills, meeting the diverse learning needs of students, and enabling students to transition from dependent to active, self-directed, lifelong learners.

Guideline 11.1
From the earliest stages in the program through the advanced practice experiences, the college or school should encourage and assist students to assume responsibility for their own learning (including assessment of their learning needs, development of personal learning plans, self-assessment of the level of their knowledge, skills, attitudes, and values, and their achievement of desired competencies and outcomes). The college or school should require and assist students to participate in the education of others, including patients, care givers, other students, and health care providers.

Guideline 11.2
The development of critical thinking and problem-solving skills through active learning[9] strategies and other high level pedagogical strategies should be supported throughout the

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[9] Active learning is a style of teaching that requires the learner to formulate answers to questions based on acquired knowledge while continuing to search for new knowledge that may provide better, more complete answers. Active learning enhances a student's ability to think in an independent and critical manner.

curriculum. Active learning strategies include the application of computer and other instructional technologies, laboratory experiences, case studies, guided group discussions, simulations and other practice-based exercises. Faculty and preceptors should employ active learning strategies and encourage students to ask questions wherever possible. Where appropriate, these techniques should involve actual or simulated patients, pharmacists, and other health care professionals.

Guideline 11.3
Experts in educational methodology and learning, such as instructional designers and educational psychologists, should be consulted to systematically improve educational materials, the assessment processes, and learning activities and outcomes.

Guideline 11.4
Colleges and schools are encouraged to experiment in the design and delivery of the curriculum. Development of innovative program pathways, courses, or teaching methods should be based on sound educational principles or the best evidence in educational practice. The college or school must evaluate the effectiveness of its curricular innovations through its assessment activities.

Guideline 11.5*
For programs employing distance-learning technologies, the college or school should employ synchronous or asynchronous[10] delivery techniques to keep learners actively participating with the information, instructor, and each other. The outcomes of the distance-learning activities must be appropriate for the student population and achievable through distance study. Interaction of students across campuses or program pathways should be stimulated and encouraged. Outcomes which are not appropriate for distance study (such as physical assessment or compounding skills) should be taught using other educational methods.

Standard No. 12: Professional Competencies and Outcome Expectations[11]
Professional pharmacist competencies that must be achieved by graduates through the professional degree program curriculum are the ability to:

1. **Provide patient care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant**

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[10] An example of synchronous delivery is an audiovisual transmission of a lecture from one site to another, where students at participating sites can interact in real time with the lecturer and other students. An example of asynchronous delivery is a Web-based lecture that the student accesses at a later time.
[11] American Association of Colleges of Pharmacy's, Center for the Advancement of Pharmaceutical Education (CAPE), Educational Outcomes, 2004 (with minor edits)

legal, ethical, social, cultural, economic, and professional issues, emerging technologies, and evolving biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences that may impact therapeutic outcomes.

2. **Manage and use resources of the health care system, in cooperation with patients, prescribers, other health care providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes of medication use.**

3. **Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an interprofessional team of health care providers.**

These professional competencies must be used to guide the development of stated student learning outcome expectations for the curriculum. To anticipate future professional competencies, outcome statements must incorporate the development of the skills necessary to become self-directed lifelong learners.

Guideline 12.1
Graduates must possess the basic knowledge, skills, attitudes, and values to practice pharmacy independently at the time of graduation. In this regard, the college or school must ensure that graduates are competent, at a minimum, to:[12]

- *provide patient-centered care*, through the ability to:
  - design, implement, monitor, evaluate, and adjust pharmacy care plans that are patient-specific; address health literacy, cultural diversity, and behavioral psychosocial issues; and are evidence-based
  - function effectively as a member of an interprofessional care team
  - manage a successful patient-centered practice (including establishing, marketing, and being compensated for medication therapy management and patient care services rendered)
- *provide population-based care*, through the ability to develop and implement population-specific, evidence-based disease management programs and protocols based upon analysis of epidemiologic and pharmacoeconomic data, medication-use criteria, medication use review, and risk-reduction strategies
- *manage human, physical, medical, informational, and technological resources*, through the ability to ensure efficient, cost-effective use of these resources in the provision of patient care

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[12] Adapted from CAPE Educational Outcomes, 2004

- *manage medication use systems*, through the ability to apply patient- and population-specific data, quality improvement strategies, medication safety and error reduction programs, and research processes to minimize drug misadventures and optimize patient outcomes; to participate in the development of drug use and health policy; and to help design pharmacy benefits
- *promote the availability of effective health and disease prevention services and health policy* through the ability to apply population-specific data, quality improvement strategies, informatics, and research processes to identify and solve public health problems and to help develop health policy

To be capable of the above, pharmacy graduates also must be able to:
- communicate and collaborate with patients, care givers, physicians, nurses, other health care providers, policy makers, members of the community, and administrative and support personnel to engender a team approach to patient care
- retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information and counseling to patients, their families or care givers, and other involved health care providers
- evaluate the quality of basic science and clinical research evidence to appropriately apply study results to practice decisions
- demonstrate expertise in informatics
- carry out duties in accordance with legal, ethical, social, economic, and professional guidelines
- maintain professional competence by identifying and analyzing emerging issues, products, and services

Standard No. 13: Curricular Core—Knowledge, Skills, Attitudes, and Values
To provide the thorough scientific foundation necessary for achievement of the professional competencies, the curriculum of the professional degree program must contain the following:

- **biomedical sciences**
- **pharmaceutical sciences**
- **social/behavioral/administrative sciences**
- **clinical sciences**

Knowledge, practice skills, and professional attitudes and values must be integrated and applied, reinforced, and advanced throughout the curriculum, including the pharmacy practice experiences.

Guideline 13.1[13]
The biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences must be of adequate depth, scope, timeliness, quality, sequence, and emphasis to provide the foundation and support for the intellectual and clinical objectives of the professional degree program. The instruction in the sciences must be appropriately rigorous to provide the basis for understanding the development and use of medications and other therapies for the treatment and prevention of disease.

Guideline 13.2
Where instruction is provided by academic units of the university other than the pharmacy program, these areas must be developed in accordance with the professional degree program's curricular goals and objectives. Appropriate assessment liaison mechanisms must be established to ensure effective instructional delivery and to ensure achievement of the educational objectives of the professional degree program.

Guideline 13.3
The college or school curriculum should address issues that cut across a number of topics, such as communication skills, professionalism, critical thinking, problem-solving, health and wellness, patient safety, teamwork, mathematical skills, and information management.

Guideline 13.4
When content is integrated across disciplines, the core knowledge base and outcomes for each discipline should be provided in adequate depth, scope, and emphasis to ensure attainment of the desired competencies.

Guideline 13.5
The content of curricular courses must be mapped to Appendix B to assess where specific content foundations are addressed in the curriculum. Gaps in curricular content and inappropriate redundancies identified in the mapping process should inform curricular revision.

Standard No. 14: Curricular Core—Pharmacy Practice Experiences
The college or school must provide a continuum of required and elective pharmacy practice experiences throughout the curriculum, from introductory to advanced, of adequate scope, intensity, and duration to support the achievement of the professional competencies presented in Standard 12.

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[13] See Appendix B: Additional Guidance on the Science Foundation for the Curriculum

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The pharmacy practice experiences must integrate, apply, reinforce, and advance the knowledge, skills, attitudes, and values developed through the other components of the curriculum. The objectives for each pharmacy practice experience and the responsibilities of the student, preceptor, and site must be defined. Student performance, nature and extent of patient and health care professional interactions, where applicable, and the attainment of desired outcomes must be documented and assessed.

In aggregate, the pharmacy practice experiences must include direct interaction with diverse patient populations in a variety of practice settings and involve collaboration with other health care professionals. Most pharmacy practice experiences must be under the supervision of qualified pharmacist preceptors licensed in the United States.

Guideline 14.1
Preceptors should hold full, shared, adjunct, or other defined positions in the college or school and should be well versed in the outcomes expected of students and the pedagogical methods that best enhance learning. In this regard, the college or school must ensure that preceptors receive orientation, especially for first-time preceptors prior to assuming their responsibilities, ongoing training, and development. Preceptors should provide close supervision of and significant interaction with students. The student-to-preceptor ratio for the pharmacy practice experiences should be adequate to provide individualized instruction, guidance, supervision, and assessment.

Guideline 14.2
When assigning students to preceptors and practice sites, the college or school should strive to avoid circumstances or relationships that could adversely affect the student/teacher relationship and the desired outcomes.

Guideline 14.3
Students must not receive remuneration from practice sites for any pharmacy practice experiences (introductory or advanced) for which academic credit is assigned.[14] Other work experiences in pharmacy settings for which no academic credit is awarded (i.e., not a component of introductory or advanced pharmacy practice experiences) may be required for advancement in the curriculum. The college or school, within their policies and procedures, for experiential education may provide financial assistance for student travel and housing that is not considered remuneration for services rendered.

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[14] A professional degree program in an institution that meets the definition and characteristics of "cooperative education" (www.co-op.edu) may apply to ACPE for a waiver of this requirement.

Guideline 14.4[15]
Introductory pharmacy practice experiences must account for not less than 300 hours (over the first three professional years). The majority of students' time (minimum of 150 hours) must be balanced between community pharmacy and institutional health system settings. These experiences must permit students, under appropriate supervision and as permitted by practice regulations, to assume direct patient care responsibilities. Additional practice experiences in other types of practice settings may also be used. The introductory pharmacy practice experiences should begin early in the curriculum, be interfaced with didactic course work that provides an introduction to the profession, and continue in a progressive manner leading to entry into the advanced pharmacy practice experiences. The didactic course work itself should not be counted toward the curricular requirement of introductory pharmacy practice experiences.

Guideline 14.5
Colleges and schools may choose to include structured simulation as part of their overall introductory pharmacy practice experiences to meet their introductory pharmacy practice experiences program goals and objectives. Simulation, defined as an activity or event replicating pharmacy practice, can be utilized for no greater than 20% (e.g., 60 hours of a 300 hour requirement) of total introductory pharmacy practice experience time, and cannot substitute for the hours devoted to actual experiences in community pharmacy and institutional health system settings (see Guideline 14.4). Colleges and schools are not required to include simulation experiences as a portion of introductory pharmacy practice experiences. For the purpose of satisfying introductory pharmacy practice experience expectations, simulation may include use of high fidelity manikins, medium fidelity manikins, standardized patients, standardized colleagues, role play, and computer-based simulations. Simulation as a component of introductory pharmacy practice experiences should clearly connect the pharmacy activity or delivery of a medication to a patient (whether simulated patient, standardized patient, or virtual patient). Colleges and schools are encouraged to develop interprofessional simulations and, if desired, should seek guidance from ACPE on appropriate simulation experiences to meet introductory pharmacy practice experiences program goals and objectives.

Guideline 14.6
The expected length of the advanced pharmacy practice experiences is not less than 1440 hours (i.e., 36 weeks) during the last academic year and after all pre-advanced pharmacy practice experience requirements (i.e., introductory pharmacy practice experiences and required core didactic course work) are completed. The organization of the advanced pharmacy practice experiences should provide a balanced series of required (the majority) and elective experiences that cumulatively provide sustained experiences of adequate intensity, duration, and breadth (in terms of patients and disease states that

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[15] See Appendix C and D for additional guidance on pharmacy practice experiences.

pharmacists are likely to encounter when providing care) to enable achievement of stated competencies as demonstrated by assessment of outcome expectations. Generally, the required and elective experiences should be full-time, provide continuity of care, and be conducted under pharmacist-preceptor supervision and monitoring.

The required advanced pharmacy practice experiences[16] in all program pathways must be conducted in the United States or its territories and possessions (including the District of Columbia, Guam, Puerto Rico, and U.S. Virgin Islands). Required experiences must include primary, acute, chronic, and preventive care among patients of all ages and develop pharmacist-delivered patient care competencies in the following settings:

- community pharmacy
- hospital or health-system pharmacy
- ambulatory care
- inpatient/acute care general medicine

The required advanced pharmacy practice experiences should emphasize the need for continuity of care throughout the health care delivery system, including the availability and sharing of information regarding a patient's condition, medications, and other therapies.

Elective advanced pharmacy practice experiences in other settings (such as research, management, drug information, education, managed care, long-term care, hospice, and home health care) should complement the required experiences and provide adequate and innovative opportunities for students to mature professionally and in accordance with their individual interests. The college or school may offer elective advanced pharmacy practice experiences outside the United States and its territories and possessions, provided that they support the development of the competencies required of the graduate, and the college or school implements policies and procedures to ensure the quality of the site(s) and preceptor(s).

Guideline 14.7
A quality assurance procedure for all pharmacy practice experiences should be established and implemented to facilitate achievement of stated competencies, provide for feedback, and support standardization, consistency, and inter-rater reliability in assessment of student performance. All practice sites and preceptors should be selected in accordance with quality criteria established and reviewed periodically for quality improvement. The assessment process should incorporate the perspectives of key

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[16] *Entry-level Competencies Needed for Pharmacy Practice in Hospitals and Health-Systems*. ASHP-ACPE Task Force report: Fall 2010 should be consulted as a resource guide (see: http://www.ashp.org/DocLibrary /MemberCenter/Entry-level-Competencies.aspx)

constituents, such as students, practitioners, prospective employers, and board of pharmacy members.

Guideline 14.8
Goals and outcomes for each pharmacy practice experience must be mapped to activities listed in Appendix C to ensure that students' experience will cover, at a minimum, all the listed activities.

Standard No. 15: Assessment and Evaluation of Student Learning and Curricular Effectiveness
As a component of its evaluation plan, the college or school must develop and carry out assessment activities to collect information about the attainment of desired student learning outcomes. The assessment activities must employ a variety of valid and reliable measures systematically and sequentially throughout the professional degree program. The college or school must use the analysis of assessment measures to improve student learning and the achievement of the professional competencies.

The college or school must systematically and sequentially evaluate its curricular structure, content, organization, and outcomes. The college or school must use the analysis of outcome measures for continuous improvement of the curriculum and its delivery.

Guideline 15.1
In general, the college or school's evaluation of student learning should:
- use a variety of assessments
- determine student achievement at defined levels of the professional competencies, in aggregate and at the individual student level
- follow a plan that documents how the learning experiences, whether didactic instruction or supervised practice experience, are appropriate for the development of the competencies, as well as the instructional methods (e.g., presentations, demonstrations, discussions) and materials that should be used
- demonstrate and document in student portfolios that graduates have attained the desired competencies, when measured in a variety of health care settings
- incorporate periodic, psychometrically sound, comprehensive, knowledge-based, and performance-based formative and summative assessments, including nationally standardized assessments (in addition to graduates' performance on licensure examinations) that allow comparisons and benchmarks with all accredited and college or school-determined peer institutions
- use teaching and learning techniques that promote: knowledge base development; integration, application, and assessment of principles; critical thinking and problem solving; and professionalism

- include student self-assessments and faculty and preceptor assessments of student development of the professional competencies and the demonstration of professional behaviors
- promote consistency and reliability of assessments within and among faculty, practice sites and preceptors

Guideline 15.2
A system of evaluation of curricular effectiveness must be developed that, in general, should:
- foster data-driven continuous quality improvement of curricular structure, content, process, and outcomes
- assess the achievement of the desired competencies and outcomes for each of the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences, as well as the overall curricular competencies and outcomes that reflect incorporation of all of these sciences in pharmacy practice
- include input from faculty, students, administrators, preceptors, practitioners, state board of pharmacy members, alumni, and others
- foster and assess self-initiated student learning
- foster and assess experimentation and innovation
- be responsive to changes in pharmacy practice and educational and practice technologies
- ensure, based on mapping strategies(see Guidelines10.3, 13.5, and 14.8) and other assessment measures, that the breadth and depth of the curricular activities are adequate for the development of the desired competencies
- ensure that educational settings and methods of instruction lead to effective and efficient learning experiences
- be evidence-based

Guideline 15.3
The college or school must ensure the credibility of the degrees it awards and the integrity of student work. Formal examinations should take place under circumstances that ensure the correct identity of the student (including students taking distance education courses) and limit opportunities for academic misconduct.

Guideline 15.4
Student portfolios should be employed to document students' progressive achievement of the competencies throughout the curriculum and the practice experiences. The portfolios should be standardized and include student self-assessment, as well as faculty and preceptor assessments of the educational outcomes.

Guideline 15.5

The college or school must have mechanisms to assess and correct underlying causes of ineffective learning experiences. In this regard, the college or school's assessments should include measurement of perceived stress in faculty, staff, and students, and evaluate the potential for a negative impact on programmatic outcomes and morale.

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STANDARDS FOR STUDENTS

The purpose of the standards in this section is to ensure that the college or school has adequate resources, fair and equitable policies and procedures, and capabilities to support student admission, progression, personal and professional development, and input into programmatic quality improvement.

Standard No. 16: Organization of Student Services

Standard No. 17: Admission Criteria, Policies, and Procedures

Standard No. 18: Transfer of Credits and Waiver of Requisites for Admission with Advanced Standing

Standard No. 19: Progression of Students

Standard No. 20: Student Complaints Policy

Standard No. 21: Program Information

Standard No. 22: Student Representation and Perspectives

Standard No. 23: Professional Behavior and Harmonious Relationships

Standard No. 16: Organization of Student Services
The college or school must have an organizational element(s) devoted to student services. The administrative officer responsible for this organizational element must oversee and coordinate the student services of the college or school.

Guideline 16.1
The college or school should ensure that the organizational element devoted to student services, in general:

- has adequate personnel and resources to undertake its responsibilities
- links with university student services
- is responsible for student recruitment programs and administration of the admissions and progression processes
- is responsible for the orientation of prospective and new students, which should include a presentation of the mission, goals, values, and educational philosophy of the college or school
- provides orientation, training, and remediation to help students become proficient in the use of the program's technology and educational methodologies
- provides informational materials (printed or electronic), such as a student handbook, with relevant policies, procedures, and codes, and a bulletin describing the college or school and the pharmacy degree program
- administers student scholarships and awards (achievement and need-based) and loans
- provides academic advising and career-pathway counseling adequate to the needs of students, including those in alternate curricular pathways, where applicable
- coordinates the availability of personal counseling for students through university resources or by other arrangements
- identifies the professional technical standards[17] required as part of the admissions and progression procedures
- plans and participates in activities that support the development of students as professionals
- provides information about post-graduate education and training opportunities, e.g., residencies, fellowships, and graduate school
- provides or otherwise makes available training for advisors, tutors, counselors, and others involved in providing student services
- provides support to faculty in effectively and efficiently teaching students with an acknowledged disability

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[17] Professional technical standards are established by the university, college, or school based on the physical and mental attributes required of students to be able to function competently as a pharmacist upon graduation.

- verifies completion of degree requirements

Guideline 16.2
The college or school must have an ordered, accurate, and secure system of student records. Student records must be confidential and maintained in compliance with the Family Educational Rights and Privacy Act (FERPA). Student services personnel must be knowledgeable regarding FERPA law and its practices.

Guideline 16.3
The college or school must provide students with financial aid information and guidance.

Guideline 16.4
The college or school must offer access to adequate health and counseling services for students. Appropriate immunization standards must be established, along with the means to ensure that such standards are satisfied. The college or school should have policies in place so that students who have off-campus classes or pharmacy practice experiences fully understand their insurance coverage and where and how to access health and counseling services.

Guideline 16.5
The college or school must establish and implement a policy on student services, including admissions and progression, that ensures nondiscrimination as defined by state and federal laws and regulations, such as on the basis of race, religion, gender, lifestyle, sexual orientation, national origin, or disability.

Guideline 16.6*
The college or school offering multiple professional degree program pathways must ensure that all students have equal access to and a comparable system of individualized student services (e.g., tutorial support, faculty advising, counseling).

Standard No. 17: Admission Criteria, Policies, and Procedures
The college or school must produce and make available to students and prospective students criteria, policies, and procedures for admission to the professional degree program. Admission materials must clearly state academic expectations, required communication skills, types of personal history disclosures that may be required, and professional standards for graduation. As a component of its evaluation plan, the college or school must regularly assess the criteria, policies, and procedures to ensure the selection of students who have the potential for academic success in the professional degree program and the ability to achieve the professional competencies and to practice in culturally diverse environments.

Student enrollment must be managed in alignment with available physical, financial, faculty, staff, practice site, preceptor, and administrative resources. The dean and a duly constituted committee of the college or school must share the final responsibility for enrollment and selection of students.

Guideline 17.1

The preprofessional educational requirements for admission to the professional degree program (not less than two academic years or the equivalent of college-level course work prior to the four academic years required by these standards) should provide basic sciences, such as general chemistry, organic chemistry, biological sciences (with a focus on human processes and diseases), mathematics, information and communication technologies, and physical sciences. Moreover, sufficient general education, defined as humanities, behavioral sciences, social sciences, and communication skills, should be provided in the preprofessional requirements to encourage the broadening of intellectual powers and interests and to facilitate the development of professional practitioners capable of understanding a culturally diverse society and their role in it as health care providers. Elements of general education also may be attained concurrently or integrated with the curriculum for the professional degree program.

Guideline 17.2

Students may be admitted to the professional degree program under early assurance agreements or policies within the institution (whether 0-6, 1-5 or 2-4 programs) or from another institution. In such admission arrangements, either a formal and published agreement should exist between the college or school and the associated institution(s) or policies should exist that are communicated to students. The early assurance student should be admitted to the professional degree program contingent upon successful completion of entrance requirements and application procedures. Early assurance students entering the first professional year of the pharmacy curriculum as defined in these standards should be at least as well qualified as students accepted for direct entry into the first professional year. The college or school must ensure that such early assurance agreements and policies allow it to manage student enrollment in alignment with physical, financial, faculty, staff, practice site, preceptor, and administrative resources, so that compliance with accreditation standards is not compromised.

Guideline 17.3

Admissions criteria, policies, and procedures should take into account necessary scholastic accomplishments, as well as other desirable qualities (such as intellectual curiosity, leadership, emotional maturity, empathy, ethical behavior, motivation, industriousness, and communication capabilities) that support the student's potential to become a self-directed lifelong learner and an effective professional. The admission process should foster diversity in the selection of students while ensuring that legal parameters are followed.

Written communication skills must be assessed in a standardized manner as part of the admission process. In-person standardized interviews of applicants, including evaluation of verbal communication skills, understanding of the pharmacy profession, and commitment to patient care, must be part of the admission process.[18] Such interviews should be conducted by faculty, preceptors, or staff, and should be held either on campus, in an off-site location, or using videoconferencing technology. To foster inter-rater reliability, interviewers should receive training in the method that the college or school has chosen for standardization of the interview process.

Guidelines 17.4
Factors beyond the grade point average should be considered to determine which candidates qualify for interviews.

Guideline 17.5
Criminal and other activities that may restrict the student's ability to access experiential sites or potentially affect the student's eligibility for future licensure, by reason of state statutes or regulations, should be identified. Policies and procedures in accord with those of the university should be in place and available, under which students will be advised of the types of disclosures they may be required to make prior to admission and during the professional degree program, what background checks they may be subject to prior to admission and during the professional degree program, and the potential adverse consequences resulting from these disclosures or background checks.

Guideline 17.6
The college or school must develop and employ admission criteria that set 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. The admission evaluation of students must be documented and records maintained by the college or school.

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[18] In the case of 0-6, 1-5, or 2-4 programs with early assurance or policy arrangements, progression into the first professional year (as defined by the ACPE standards) can occur without the required interview only if formative and summative assessments in courses or activities (overseen by pharmacy faculty) are used to assess eligibility for progression based on the student's verbal and written communication skills, understanding of the pharmacy profession, and commitment to patient care. Evidence that each early assurance or policy arrangement student met the admission and progression requirements for entry into the first professional year must be documented as part of the admissions process. Transfer students into the first professional year of the curriculum for 0-6, 1-5, or 2-4 programs must be interviewed.

Guideline 17.7
A recruitment program should be established to provide a pool of well-qualified and diverse applicants for the available positions. Admission criteria, policies, and procedures must not be compromised regardless of the size and quality of the applicant pool.

Guideline 17.8
As a component of its evaluation program, the college or school should undertake studies to correlate admissions criteria, policies, and procedures with student achievement in the professional degree program and performance in professional practice.

Guideline 17.9*
Colleges and schools should assess through admissions counseling procedures whether a student who will be learning at a distance has the self-motivation, commitment, skills, and competencies to benefit from and succeed in a distance-learning environment. Information gained should be used to update future admission and recruitment policies and decisions. All students admitted into distance-learning programs or pathways should possess the basic technological knowledge and skills to use the equipment utilized in the program. Where the effectiveness of new program initiatives has not yet been determined, initial course, pathway, or program enrollments should be limited and increased gradually until the effectiveness of the initiative is established. Consultation with ACPE must occur at least six months before recruiting students into new pathways or programs.

Standard No. 18: Transfer of Credits and Waiver of Requisites for Admission with Advanced Standing
The college or school must produce and make available to students and prospective students transfer credit and course-waiver policies, based on rational procedures and defensible assessments.

Guideline 18.1
The college or school must implement policies and procedures for the evaluation of the equivalency of educational courses (preprofessional or professional) prior to admission or transfer to the professional degree program.

Guideline 18.2
Credits toward completion of the professional program in pharmacy may be transferred from one ACPE-accredited professional degree program to another.

Guideline 18.3*
For colleges or schools with nontraditional curricular pathways, for example, pathways for graduates of an ACPE-accredited baccalaureate in pharmacy program or for students in multiple professional degree program pathways, admission criteria and transfer credits should be customized in accordance with the results of a candidate's individualized assessments.

Requisites may only be waived based upon an educationally sound assessment of the professional competencies (as set forth in Standard 12) that may have been achieved through continuing pharmacy education, other postgraduate education and training, and previous pharmacy practice experience.

Guideline 18.4*
Colleges and schools offering multiple professional degree program pathways must establish and implement policies and procedures for students who request to transfer credits or who wish to change from one program pathway to another.

Standard No. 19: Progression of Students
The college or school must produce and make available to students and prospective students criteria, policies, and procedures for academic progression, academic probation, remediation, missed course work or credit, dismissal, readmission, rights to due process, and appeal mechanisms.

Guideline 19.1
The college or school should develop admission criteria, policies and procedures, student services, curricular evaluation and revision, and formative and summative assessment of achievement of competencies that collectively maximize the likelihood of successful student completion of the professional degree program in the expected timeframe.

Guideline 19.2
The college or school's system of monitoring student performance based on formative assessments of learning outcomes must provide for the early detection of academic difficulty. The college or school should provide individualized student services, such as tutorial support and faculty advising.

Guideline 19.3
The college or school should have progression policies that take into consideration assessments of professional behavior and academic integrity.

Guideline 19.4

The college or school should have records of student retention and attrition for purposes of identifying and analyzing trends and making programmatic adjustments as appropriate.

Standard No. 20: Student Complaints Policy

The college or school must produce and make available to students a complaints policy that includes procedures to be followed in the event of a written complaint related to one of the accreditation standards, student rights to due process, and appeal mechanisms. Students must receive information on how they can submit a complaint to ACPE for unresolved issues on a complaint related to the accreditation standards.[19]

Guideline 20.1

The college or school must include information about the complaint policy during student orientation and should reinforce its availability periodically during the professional degree program.

Guideline 20.2

The college or school must maintain a chronological record of student complaints related to matters covered by the accreditation standards and allow inspection of the records during on-site evaluation visits by ACPE.

Guideline 20.3

The college or school must inform ACPE during an on-site evaluation if any of the student complaints related to the accreditation standards have led to legal proceedings, and the outcomes of such proceedings.

Standard No. 21: Program Information

The college or school must produce and make available to students and prospective students a complete and accurate description of the professional degree program, including its current accreditation status.

Guideline 21.1

A current description (electronic or printed), such as a college or school catalog, a student handbook, or related college or university documents should be available that, in general, include the following:

- the mission, goals, objectives, and educational philosophy of the professional degree program

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[19] Refer also to ACPE Complaints Policy at http://www.acpe-accredit.org/complaints/default.asp

- the curricular plan, courses, and credit hours
- resources available to support the curriculum
- criteria, policies, and procedures related to admissions, progression, and access to student records
- the types of disclosures students may be required to make prior to admission or during the professional degree program, what background checks they may be subject to prior to admission or during the professional degree program, and the potential adverse consequences resulting from the disclosures or background checks
- college or school grading policy, grade scheme, and GPA calculation policy
- student code documents, such as ethics, conduct, and professional behavior
- off-campus curricular requirements, such as practice experiences in other geographic locations
- graduation requirements
- tuition and fees, including refund policies
- financial aid guidance
- statement of nondiscrimination
- provision for on and off-campus housing, including availability during off-campus practice experiences
- graduation and post-graduation placement (e.g., employment, post-graduate education and training programs) rates
- current accreditation status of the program and contact information for ACPE
- recent pass rates of graduates taking the standardized licensure examinations for the first time
- expectations for attitudes, values, traits, and ethics required in the profession
- a description of policies regarding student life, such as accommodations for disabilities, harassment, antiviolence, and others
- immunization and other health or practice site requirements

Guideline 21.2*
Admissions policies, procedures, and practices must fully and clearly represent the conditions and requirements related to distance learning, including full disclosure of any requirements that cannot be completed at a distance. Colleges and schools offering multiple program pathways should assess appropriate tuition and fees for facilities and services rendered. An explanation of tuition and fee differences between pathways or differences in facilities and services between pathways should be available upon request.

Standard No. 22: Student Representation and Perspectives
The college or school must consider student perspectives and include student representation, where appropriate, on committees, in policy-development bodies, and in assessment and evaluation activities.

Guideline 22.1
The college or school should have a student government as well as suitable committees, such as a student/faculty relations committee, to develop student leadership and professionalism, to ensure a forum for student dialogue, and to ensure adequate communication of student opinions and perspectives.

Guideline 22.2
The college or school must involve student representatives on appropriate program committees, as well as in accreditation self-studies and strategic planning activities.

Guideline 22.3
Instruments and techniques, such as course evaluations, focus groups, meetings with the dean or other administrative leaders, exit interviews, and nationally standardized surveys (e.g., those available through the American Association of Colleges of Pharmacy), should be systematically employed to obtain student perspectives on faculty, curriculum, student achievement of competencies, student services, and other aspects of the professional degree program. The assessment data so obtained should be systematically analyzed and used to improve all aspects of the program and to allow for longitudinal and cross-program evaluation. The college or school should share with students the aggregate results of their participation in the systematic process of program evaluation and improvement.

Guideline 22.4*
Students should be provided with equitable representation regardless of the program pathway in which an individual student may be enrolled.

Standard No. 23: Professional Behavior and Harmonious Relationships
The college or school must provide an environment and culture that promotes professional behavior and harmonious relationships among students, faculty, administrators, preceptors, and staff. Faculty, administrators, preceptors, and staff must be committed to developing professionalism and fostering leadership in students and to serving as mentors and positive role models for students.

Guideline 23.1
The college or school must develop, via a broadly based process, a policy (consistent with university policies on student, faculty, preceptor, and staff professionalism) that defines expected behaviors and consequences for deviation from the policy, as well as due process for appeals.

Guideline 23.2
The college or school should foster and support opportunities for students to participate in student self-government.

Guideline 23.3
The college or school should support students, faculty, administrators, preceptors, and staff participation in, as appropriate, local, state, and national pharmacy, scientific, and other professional organizations.

Guideline 23.4
The college or school should implement strategies and programs to broaden the professional horizons of students in areas such as scientific inquiry, scholarly concern for the profession, the relevance and value of research, and postgraduate education and training through guest lecturers, participation in curricular and extracurricular activities, service learning, and other beneficial activities, such as White Coat Ceremonies that welcome students into the profession of pharmacy.

Guideline 23.5
The college or school should evaluate, through the results of surveys, focus groups or other means, whether relationships among students, faculty, administrators, preceptors, and staff are harmonious.

Guideline 23.6
Student interactions with faculty, administrators, preceptors, and staff should be facilitated through formal and informal activities. To foster harmonious relationships and positive role models, the college or school should encourage faculty guidance for student committees and attendance by faculty, administrators, preceptors, and staff at student functions, both professional and social. Student interactions with residents and fellows, and informal mentoring of students by residents or fellows, should be maximized whenever possible.

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<u>STANDARDS FOR FACULTY AND STAFF</u>

The purpose of the standards in this section is to ensure that the college or school has fair and equitable policies and procedures and capabilities to attract, develop, and retain an adequate and appropriate number of qualified faculty and staff to contribute to and achieve the mission and goals.

Standard No. 24: Faculty and Staff—Quantitative Factors

Standard No. 25: Faculty and Staff—Qualitative Factors

Standard No. 26: Faculty and Staff Continuing Professional Development and Performance Review

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Standard No. 24: Faculty and Staff—Quantitative Factors

The college or school must have a sufficient number of qualified full-time faculty and staff to effectively deliver and evaluate the professional degree program, while providing adequate time for faculty development, research and other scholarly activities, service, and pharmacy practice.

Guideline 24.1
Within the members of the full-time faculty, there should be an appropriate mix and balance of academic titles and experience within each discipline. The full-time faculty and staff may be complemented by part-time (co-staffed or co-funded) and voluntary faculty. Voluntary faculty should have adjunct status or another appropriate academic title or defined position.

Guideline 24.2
The number of full-time faculty must be sufficient, without the need for a major contribution from the college or school's administrators, to ensure time for:
- effective organization and delivery of the curriculum through classroom, small group, laboratory, practice simulation, and oversight and provision of experiential education
- faculty mentoring
- student advising and mentoring
- research and other scholarly activities
- faculty development as educators and scholars
- service and pharmacy practice
- participation in college or school and university committees
- assessment and evaluation activities

The college or school should periodically conduct faculty workload and needs assessments, at appropriate intervals. In general, a nucleus of full-time faculty should result in student-to-faculty ratios (including students in all program pathways) in line with data collected annually by the American Association of Colleges of Pharmacy for programs of similar size and mission.

Guideline 24.3[20]
The student-to-preceptor ratio for the practice experience components of the curriculum should be adequate to provide individualized instruction, guidance, and evaluative supervision, and to comply with state statutes and regulations. Important factors to be considered are the number of students each preceptor is assigned during the introductory pharmacy practice experiences and, particularly, during the advanced pharmacy practice experiences, the nature of the practice setting, and the character of instructional delivery.

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[20] Additional guidance is provided in Standard 14 and Appendix C.

Guideline 24.4
Adequate staff resources, such as administrative assistants, secretaries, student services personnel, teaching assistants, laboratory technicians, and information and communication technology personnel, should be provided to allow effective operation of the college or school.

Guideline 24.5
Adequate quantitative strength of the faculty and staff should be ensured through capacity planning, as well as recruitment and retention strategies that take into account substantive program changes, retirements, potential illness, and the time needed to prepare for responsibilities in the program. All faculty members should have adequate time, commensurate with their teaching experience and familiarity with the subject matter, to prepare course work before the start of a class. Practice faculty should have adequate time to develop experiential practice sites prior to student assignment.

Standard No. 25: Faculty and Staff—Qualitative Factors
The college or school must have qualified faculty and staff who, individually and collectively, are committed to its mission and goals and respect their colleagues and students. Faculty must possess the required professional and academic expertise, have contemporary knowledge and abilities in current educational philosophy and techniques, and be committed to the advancement of the profession and the pursuit of research and other scholarly activities. Faculty whose responsibilities include the practice of pharmacy must satisfy all professional licensure requirements that apply to their practice. The college or school must foster the development of its faculty and staff, commensurate with their responsibilities in the program.

Guideline 25.1
Full-time faculty should hold an earned doctoral degree appropriate to their responsibilities in the program. Faculty in the sciences should have doctoral education and, to foster scholarship and research, postdoctoral research training or equivalent experience. Pharmacy practice faculty should possess additional professional training (residency, fellowship, or equivalent experience) and either have or be working toward credentials (for example, specialty certification) relevant to their practice and teaching responsibilities. Faculty should show evidence of scholarship and publication.

Guideline 25.2
The college or school, consistent with university policies, should establish and implement a process to validate all educational and training credentials of faculty, administrators, and staff to ensure that required tasks can be reliably performed and to ensure that other criteria (criminal records, for example) have been researched and considered.

Guideline 25.3
The college or school must ensure that policies and procedures for faculty recruitment, promotion, tenure (if applicable), and retention are established and applied in a consistent manner.

Guideline 25.4
The college or school must ensure that the faculty composition, including any contributions from internal and external relationships, encompasses the relevant disciplines within the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences to meet the education and research needs as defined by the mission statement. Faculty should provide students both content and perspectives unique to their discipline and critical to problem solving and lifelong learning. Faculty, regardless of their discipline, must have or develop a conceptual understanding of current and proposed future pharmacy practice in a variety of settings. To ensure understanding of the foundations of the curriculum and foster collaborative teaching and research, faculty should have a general awareness of the scholarship and research of their colleagues in other academic disciplines.

Guideline 25.5
The college or school should select faculty and staff in accordance with a policy that ensures nondiscrimination, as defined by state and federal statutes and regulations, on the basis of, for example, race, religion, gender, lifestyle, sexual orientation, national origin, or disability. The college or school should strive to achieve diversity in its faculty, administrators, and staff through its recruitment policies and procedures.

Guideline 25.6
To contribute to the maintenance and enhancement of practice skills of faculty, and to develop such skills in students, pharmacy practice faculty who precept pharmacy practice experiences that involve direct patient care or provide instruction related to contemporary patient care should be engaged in patient medication therapy management.

Guideline 25.7
The faculty must have the capability and continued commitment to be effective teachers. Effective teaching requires knowledge of the discipline, effective communication skills, and an understanding of pedagogy, including construction and delivery of the curriculum. Faculty should deploy educational technologies and techniques that support various modes of educational delivery (e.g., simulations and case studies) and evaluation (e.g., test construction and clinical performance assessments). Educational support systems should be provided to practitioners serving as voluntary faculty in the pharmacy practice experience component of the curriculum.

Guideline 25.8
Faculty should generate and disseminate knowledge through scholarship. Scholarship by faculty members, including the scholarship of teaching, must be evident and demonstrated by productive research and other scholarly activities, such as contributions to the scientific, professional, and educational literature; publication of books and review articles; and successes in securing extramural funding to support research and other scholarly activities.

Guideline 25.9
The college or school should provide, or be affiliated with institutions that provide, postgraduate education and training, including accredited residency and fellowship programs.

Guideline 25.10
To support the development of professional values in students and an understanding of issues affecting the profession of pharmacy, faculty and administrators should actively participate in pharmacy professional and scientific organizations.

Guideline 25.11*
Faculty, instructors, and teaching assistants involved in distance education should be qualified not only to provide instruction in their subject areas but should also be qualified through training or experience to manage, teach, evaluate, and grade students engaged in distance learning.

Standard No. 26: Faculty and Staff Continuing Professional Development and Performance Review
The college or school must have an effective continuing professional development program for full-time, part-time, and voluntary faculty and staff consistent with their responsibilities. The college or school must review the performance of faculty and staff on a regular basis. Criteria for performance review must be commensurate with the responsibilities of the faculty and staff in the professional degree program.

Guideline 26.1
The college or school must have or provide support for programs and activities for faculty and preceptor continuing professional development as educators, researchers, scholars, and practitioners commensurate with their responsibilities in the program.

In general, the programs and activities for full-time and part-time faculty, as well as for volunteer faculty where appropriate, should:
- support the attainment of the promotion and tenure (if applicable) requirements

- support the acquisition or enhancement of skills needed to teach diverse learners
- assist faculty in efforts to become and remain productive scholars
- foster the achievement of new credentials
- address methods to better evaluate student achievement of the desired competencies
- provide orientation and ongoing training to faculty, instructors, and teaching assistants to help them become proficient in the use of the program's technology and educational methodologies
- provide strategies to develop consistent socialization, leadership, and professionalism in students throughout the curriculum
- be mandatory for first-time preceptors prior to the precepting of students
- include attendance at relevant professional meetings
- encourage faculty to become involved in professional organizations and continuing education programs and conferences, within and outside the college or school
- encourage continuing professional development by faculty and students
- provide opportunities for faculty-to-faculty mentoring
- ensure an understanding of ACPE's accreditation standards, guidelines, policies, and procedures to assist the dean in ensuring compliance

In addition, programs and activities for volunteer preceptors should support their professional development.

Guideline 26.2
The faculty and staff evaluation process should be annual, involve self-assessment, and include appropriate input from peers, supervisors, and students. The use of self-assessment and improvement tools, such as portfolios, by faculty and staff is encouraged.

Guideline 26.3
In general and commensurate with their responsibilities in the program, all faculty should be evaluated as to their:
- teaching abilities, communication skills, and effectiveness related to pharmacy education
- generation and dissemination of knowledge through research and other scholarly activities, including publications
- commitment to personal continuing professional development
- patient care activities
- contributions to the advancement and promotion of the profession of pharmacy
- contributions toward advancement of the professional development of students
- contribution and collegiality in support of achievement of the college or school's mission and goals

- service contributions to the program and the community at large

Guideline 26.4
Evidence of the effectiveness of continuing professional development of faculty, as appropriate to their responsibilities in the program, should include:
- evaluation of education, research and other scholarly activities, and practice responsibilities
- development and evaluation of innovative education, research and other scholarly activity, and practice models
- participation in professional and scholarly meetings
- presentation of scholarly work
- service as an officer or committee member of school or college and external organizations
- presentation of continuing education programs
- other endeavors that promote the profession of pharmacy to society

Guideline 26.5
All staff should be evaluated, commensurate with their responsibilities, as to their:
- competence in support of administrators, faculty, preceptors, students, alumni and other stakeholders
- commitment to continuing knowledge and skills development
- collegiality in support of achievement of the mission
- service contributions to the program and the community at large

Guideline 26.6
The faculty evaluation process should recognize and value faculty members who contribute to the professional development of students through such activities as academic advising, career pathway counseling, and student organization advising.

Guideline 26.7
The periodic review of the dean and other administrative leaders of the college or school should include input from administrators, faculty, students, and preceptors.

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STANDARDS FOR FACILITIES AND RESOURCES

The purpose of the standards in this section is to ensure that the college or school has adequate and appropriate physical, library, educational, practice site, and financial resources to offer a high-quality professional degree program in pharmacy and meet its mission and goals and the accreditation standards.

Standard No. 27: Physical Facilities

Standard No. 28: Practice Facilities

Standard No. 29: Library and Educational Resources

Standard No. 30: Financial Resources

Standard No. 27: Physical Facilities

The college or school must have adequate and appropriate physical facilities to achieve its mission and goals. The physical facilities must facilitate interaction among administration, faculty, and students. The physical facilities must meet legal standards and be safe, well maintained, and adequately equipped.

Guideline 27.1
Physical facilities must provide a desirable, comfortable, and safe environment for teaching and learning and, in general, should include:

- offices for administrators and core faculty that provide privacy for study and for counseling and advising students
- accommodations for staff, commensurate with their responsibilities
- lecture rooms, small classrooms, and conference rooms to accommodate curricular and other programmatic needs
- facilities for individual and small group study by students
- information and communication technologies to support the mission, including faculty and staff development, with appropriate data security and recovery systems
- laboratories dedicated to professional curriculum instruction and practice simulation that are reflective of contemporary pharmacy practice and standards, including facilities for extemporaneous preparation of intravenous and other medications
- facilities that encourage interprofessional interactions (e.g., simulation laboratories)
- laboratories and other resources, such as instrumentation, to support research and other scholarly activities
- student activity areas, including space for professional organization materials and meetings, to support a favorable environment for student life
- appropriate equipment to support the needs of administration, faculty, preceptors, and students that is up-to-date and well maintained

Guideline 27.2
For colleges and schools that use animals in their professional course work or research, proper and adequate animal facilities must be maintained in accordance with acceptable standards for animal facilities. Animal use must conform to Institutional Animal Care and Use Committee (or equivalent) requirements. Accreditation of the laboratory animal care and use program is encouraged.

Guideline 27.3
Space within colleges and schools dedicated for human investigation must comply with state and federal statutes and regulations. All human investigations performed by college

or school faculty, whether performed at the college or school or elsewhere, must be approved by the appropriate Institutional Review Board(s) and meet state and federal research standards.

Guideline 27.4
Students, faculty, preceptors, instructors, and teaching assistants should have access to appropriate resources to ensure equivalent program outcomes across all program pathways, including access to technical, design, and production services to support the college or school's various program initiatives. The selection of educational resources and technologies should be based on appropriateness to the curriculum and students. Restorable backups of critical systems and data should be kept, preferably at locations away from the original systems and data. Alternate means of communication and information delivery should be accessible when needed.

Guideline 27.5*
Commensurate with the numbers of students, faculty and staff, and the activities and services provided, branch or distance campuses must have or have access to physical facilities of comparable quality and functionality as those of the main campus.

Standard No. 28: Practice Facilities
To support the introductory and advanced pharmacy practice experiences (required and elective) and to advance collaboratively the patient care services of pharmacy practice experience sites (where applicable), the college or school must establish and implement criteria for the selection of an adequate number and mix of practice facilities and secure written agreements with the practice facilities.

Guideline 28.1
Before assigning students to any given practice site, the college or school must screen the site and associated preceptors using defined quality criteria to ensure that the educational experience would afford students the opportunity to achieve the required competencies.

Guideline 28.2
At a minimum, for all sites for required pharmacy practice experiences and for frequently used sites for elective pharmacy practice experiences, a written affiliation agreement between the site and the college or school must be executed. The agreement should clearly define the responsibilities, commitments, and expectations of each of the parties regarding the education of students. Agreements should provide for criteria for termination and sufficient advance notification of termination in order to permit development of alternate affiliations should this become necessary. Agreements should also address student-related matters such as health services, malpractice provisions,

criminal background checks, student disclosures, immunization policies, and professional conduct expectations.

Guideline 28.3

The college or school must identify a diverse mixture of sites for required and elective pharmacy practice experiences. In general, each site used for required pharmacy practice experiences should have the following characteristics:

- meets or exceeds all legal and professional standards required to provide patient care
- has a patient population that exhibits diversity in culture, medical conditions, gender, and age, where appropriate
- has an adequate patient population based on the learning objectives for the rotation
- has access to learning and information resources
- has a commitment to the education of pharmacy students
- has management that is supportive of professional staff involvement in the education of pharmacy students
- has a practice environment that nurtures and supports pharmacist and student interactions with patients
- provides daily contact with the preceptor or a qualified designee to ensure that students receive feedback and have opportunities to ask questions
- is adequately equipped with the technology needed to support student training and to reflect contemporary practice
- provides medication therapy management and patient care services for diverse populations
- has adequate professional staff and supportive technical and clerical staff to meet the learning objectives and to provide for optimum time for preceptor and student interaction
- provides educational workshops for patients and other health care providers
- serves as an accredited site for training of pharmacy residents
- has collaborative professional and/or training relationships with other health care providers
- demonstrates a strong commitment to health promotion and illness prevention as reflected by the services provided and/or products sold (e.g., provision of health screening, tobacco cessation counseling, immunizations; not stocking cigarettes and other tobacco products)

The college or school should ensure the availability of a broad array of quality-assured sites for elective pharmacy practice experiences (such as state or national pharmacy associations, state boards of pharmacy, pharmacy benefit managers, insurance

companies, pharmaceutical manufacturers, drug information centers, and research laboratories) to support the achievement of curricular competencies and student interests.

Guideline 28.4
The college or school must periodically assess the quality of sites and preceptors in light of curricular needs and must identify additional sites when needed. Colleges or schools must also discontinue relationships that do not meet preset quality criteria.

Standard No. 29: Library and Educational Resources
The college or school must ensure access for all faculty, preceptors, and students to a library and other educational resources that are sufficient to support the professional degree program and to provide for research and other scholarly activities in accordance with its mission and goals. The college or school must fully incorporate and use these resources in the teaching and learning processes.

Guideline 29.1
In general, the library and educational resources should:
- satisfy generally accepted standards and practices for library and educational resources and access
- include print holdings and access to online journals, databases, and other resources that support the teaching and research program and that are selected by using tools such as the *Basic Resources for Pharmacy Education* of the American Association of Colleges of Pharmacy and a written collection development policy that is aligned with the college or school's mission and goals
- be under the direction of qualified librarians and media professionals (e.g., master's prepared) who have good working relationships with the college or school
- provide sufficient study, reading, and computer space for students, faculty, and preceptors
- include a faculty liaison or committee to ensure the adequacy of the collection, educational technologies, and services and to ensure their appropriate integration into the teaching program
- include remote access technologies and mechanisms that promote use of library information from off-campus sites by faculty, students, and preceptors
- have holdings and reference source search capabilities, interlibrary loan, and other methods for access to materials not in the collection

Guideline 29.2
The college or school should provide organized programs to teach faculty, preceptors, and students the effective and efficient use of the library and educational resources.

Guideline 29.3
To foster improvement, student, preceptor, and faculty opinions should be sought and evaluated regarding the adequacy of and access to library and educational resources, and estimates of utilization should be obtained.

Standard No. 30: Financial Resources
The college or school must have the financial resources necessary to accomplish its mission and goals. The college or school must ensure that student enrollment is commensurate with its resources.

Guideline 30.1
The resources to deliver the program must be sufficient to allow the college or school to achieve its stated mission and make reasonable progress toward its goals. An uncommitted reserve of resources should be available to address unexpected issues.

Guideline 30.2
The college or school must have input into the development of and operate a budget that is planned, developed, and managed in accordance with sound and accepted business practices. Financial resources must be deployed efficiently and effectively to:
- support all aspects of the mission, goals, and strategic plan
- ensure stability in the delivery of the program
- allow effective faculty, administrator, and staff recruitment, retention, and development
- maintain and improve physical facilities, equipment, and other educational and research resources
- enable innovation in education, interprofessional activities, research and other scholarly activities, and practice
- measure, record, analyze, document, and distribute assessment and evaluation activities
- ensure an adequate quantity and quality of practice sites and preceptors to support the curriculum

Guideline 30.3
Enrollment must be planned and managed in line with resource capabilities, including tuition and professional fees. Programs experiencing substantive changes in scope or student numbers must develop business plans, including revenue and expense *pro forma* for the time period over which the change will occur and beyond. The *pro forma* should demonstrate where resources are being added and how they will meet the program requirements caused by the change(s) over time. In general, tuition and professional fee increases specific to the pharmacy program should be returned in large measure to the college or school for quality assurance and continuous quality improvement. Tuition for

pharmacy students must not be increased primarily to support unrelated educational programs.

Guideline 30.4
The college or school, with the support of the university, should develop and maintain a broad base of financial support, including a program to acquire extramural funds through private giving, endowment income, grants, contracts, and other fund-raising mechanisms. The university administrators responsible for the pharmacy program should have a clear understanding of the resource needs of the professional degree program, such as the need to support scholarship and research and the requirements of library and educational resources and experiential education. Resources obtained from extramural sources should be free of restrictions that may interfere with sound educational and ethical policies, and such resources should be used in a manner that maintains the integrity of and supports the mission.

Guideline 30.5
The dean must report to ACPE, in a timely manner, any budget cuts or other financial factors that could negatively affect the quality of the professional degree program or other aspects of the mission of the college or school.

Guideline 30.6*
The college or school must ensure that funds are sufficient to maintain equivalent facilities (commensurate with services and activities) across all program pathways. Such funding should include regular technological updates. The college or school's initiatives should not adversely affect its administrative effectiveness, result in faculty overload, or cause undue financial stress or instability. New methods of educational delivery should be cost-effective; however, financial considerations such as developing economies of scale should not overshadow the requirement to develop academically effective educational experiences.

Appendix A

Joint Commission of Pharmacy Practitioners
Future Vision of Pharmacy Practice 2015

Background

The organizations of the Joint Commission of Pharmacy Practitioners (JCPP), including seven member pharmacy practitioner groups (Academy of Managed Care Pharmacy, American College of Apothecaries, American College of Clinical Pharmacy, American Pharmacists Association, American Society of Consultant Pharmacists, American Society of Health-System Pharmacists, National Community Pharmacists Association) and four liaison members (Accreditation Council for Pharmacy Education, American Association of Colleges of Pharmacy, National Association of Boards of Pharmacy, National Council of State Pharmacy Association Executives) have all endorsed the following common vision of the preferred future for pharmacy by the year 2015.

The JCPP Future Vision of Pharmacy Practice is a consensus document that articulates a vision for pharmacy and how it will be practiced. Equally important, the document describes how pharmacy practice will benefit society. The document was officially adopted by the JCPP members' executive officers following the November 2004 JCPP meeting and has subsequently been endorsed by each JCPP member's board of directors.

The stakeholders group identified and prioritized the top groups and organizations pharmacy must engage in efforts to work toward the vision of optimized medication use. While pharmacy intends to take leadership roles in improving the use of medications in health and wellness it cannot do so in isolation from the many others involved in the medication use process.

Future Vision of Pharmacy Practice
Vision Statement

Pharmacists will be the health care professionals responsible for providing patient care that ensures optimal medication therapy outcomes.

Pharmacy Practice in 2015

The Foundations of Pharmacy Practice. Pharmacy education will prepare pharmacists to provide patient-centered and population-based care that optimizes medication therapy; to manage health care system resources to improve therapeutic outcomes; and to promote health improvement, wellness, and disease prevention. Pharmacists will develop and maintain:

- a commitment to care for, and care about, patients
- an in-depth knowledge of medications and the biomedical, sociobehavioral, and clinical sciences
- the ability to apply evidence-based therapeutic principles and guidelines, evolving sciences and emerging technologies, and relevant legal, ethical, social, cultural, economic, and professional issues to contemporary pharmacy practice

How Pharmacists Will Practice. Pharmacists will have the authority and autonomy to manage medication therapy and will be accountable for patients' therapeutic outcomes. In doing so, they will communicate and collaborate with patients, care givers, health care professionals, and qualified support personnel. As experts regarding medication use, pharmacists will be responsible for:

- rational use of medications, including the measurement and assurance of medication therapy outcomes
- promotion of wellness, health improvement, and disease prevention
- design and oversight of safe, accurate, and timely medication distribution systems

Working cooperatively with practitioners of other disciplines to care for patients, pharmacists will be:

- the most trusted and accessible source of medications and related devices and supplies
- the primary resource for unbiased information and advice regarding the safe, appropriate, and cost-effective use of medications
- valued patient care providers whom health care systems and payers recognize as having responsibility for assuring the desired outcomes of medication use

How Pharmacy Practice Will Benefit Society. Pharmacists will achieve public recognition that they are essential to the provision of effective health care by ensuring that:

- medication therapy management is readily available to all patients
- desired patient outcomes are more frequently achieved
- overuse, underuse, and misuse of medications are minimized
- medication-related public health goals are more effectively achieved
- cost-effectiveness of medication therapy is optimized

Appendix B

Additional Guidance on the Science Foundation for the Curriculum

During the standards revision process from 2003 to 2006, ACPE stakeholders (faculty, practitioners, regulators, and others) identified elements of the science foundation that they believe essential to the development of pharmacists. Some of these areas may be addressed in pre-pharmacy courses, while the majority would be the purview of the curriculum of the professional degree program. The majority of the sections listed would reflect required course work, while some could be addressed in elective courses. Laboratory experiences and patient-care simulations should be incorporated as appropriate to the subject matter. Topic headings do not imply the need for separate courses but rather that the material be addressed adequately in the curriculum. Content may be delivered as individual or integrated courses involving multiple disciplines. It is expected that the listing below will change as a function of evolution of the profession, leading to future updates of this appendix.

Thus, the following information is provided as a basis for curricular evaluation and continuous quality improvement, driven by the mission and goals of the college or school.

Today's ever-changing health care environment requires a pharmacy practitioner to be knowledgeable and competent in the following areas critical to the foundation and delivery of effective patient care. The foundation in the sciences suggested by ACPE stakeholders follows:

Basic Biomedical Sciences

Anatomy and Physiology
- structure and function of major body systems: integumentary, muscular skeletal, cardiovascular, lymphatic, respiratory, digestive, nervous, endocrine, urinary, reproductive, and body fluid and electrolytes
- molecular aspects of cell biology
- cell physiology and cellular structure and organization

Pathology/Pathophysiology
- basic principles and mechanisms of disease, including:
    o inflammation and repair
    o degeneration
    o disturbances on hemodynamics
    o developmental defects
    o neoplasia

- pathophysiology of disease states amenable to pharmacist intervention

Microbiology
- general principles of microbial concepts
- principles of infectious disease
- host-parasite relationships
- pathogenic micro-organisms of man
- inflammatory responses to infectious agents
- clinical aspects of infection

Immunology
- human immunity and immune response
- principles of antigen-antibody relationships
- molecular biology of immune response
- genetic basis for antibody synthesis, development, function, and immunopathology

Biochemistry/Biotechnology
- chemistry of biomacromolecules (proteins, lipids, carbohydrates, and DNA)
- enzymology and co-enzymes and kinetics
- metabolic pathways to energy utilization
- nucleic acid metabolism, including DNA replication and repair, RNA, and protein synthesis
- recombinant DNA technology

Molecular Biology/Genetics
- cell structure and components
- ion channels and receptor physiology
- mitosis and meiosis
- chromosomes and DNA
- gene transcription and translation processes
- recombinant DNA technology

Biostatistics
- understanding of commonly used statistical tests and their basis
- management of data sets
- evaluation of statistical results
- understanding of statistical versus clinical significance

Pharmaceutical Sciences

Medicinal Chemistry
- physico-chemical properties of drug molecules in relation to drug absorption, distribution, metabolism, and excretion (ADME)
- chemical basis of pharmacology and therapeutics
- fundamental pharmacophores for drugs used to treat disease
- structure activity relationships in relation to drug-target interactions
- chemical pathways of drug metabolism
- application to making drug therapy decisions

Pharmacology
- mechanism of action of drugs in various categories
- role of pharmacology in drug choice and the treatment of disease
- pharmacodynamics of drug action and absorption, distribution, metabolism, and elimination
- adverse effects and side effects of drugs
- drug-target interactions
- drug-drug, drug-food, drug-lab test interactions
- drug discovery and development

Pharmacognosy and Alternative and Complementary Treatments
- concepts of crude drugs, semi-purified, and purified natural products
- variability of occurrence of pharmacologically active substances in plants and impact on regulatory aspects of herbal products
- overview of classes of pharmacologically active natural products
- dietary supplements (vitamins, minerals, and herbals)
- alternative medical treatments
- evaluation of alternative and complementary medicine purity, bioavailability, safety, and efficacy
- herbal-drug interactions
- Dietary Health Supplement and Education Act and impact on regulation of dietary supplements and herbal products

Toxicology
- mechanism of toxicity and toxicokinetics
- acute and chronic toxic effect of xenobiotics on the body, including drug or chemical overdose and toxic signs of drugs of abuse
- interpretation of drug screens
- antidotes and approaches to toxic exposures

- functions of poison control centers
- bioterrorism and disaster preparedness and management

Bioanalysis/Clinical Chemistry
- fundamentals of laboratory medicine and its importance to screening, diagnosis, and evaluation of patients
- clinical data relevant to disease state management

Pharmaceutics/Biopharmaceutics
- physical-chemical principles of dosage forms
- biological principles of dosage forms
- principles of drug delivery via dosage forms (e.g., liquid, solid, semi-solid, controlled release, patches, and implants)
- principles of dosage form stability and drug degradation in dosage forms
- materials and methods used in preparation and use of dosage forms

Pharmacokinetics/Clinical Pharmacokinetics
- basic principles of in vivo drug kinetics (linear and nonlinear)
- principles of bioavailability/bioequivalence
- physiologic determinates of drug onset and duration
- drug, disease, and dietary influences on absorption, distribution, metabolism, and excretion
- clinical pharmacokinetics of commonly used and low-therapeutic-index drugs
- the pharmacokinetic-pharmacodynamic interface

Pharmacogenomics/genetics
- genetic basis for disease and drug action
- genetic basis for alteration of drug metabolism
- genome and proteomic principles in relation to disease and drug development
- genetic basis for individualizing drug doses

Extemporaneous Compounding/Parenteral/Enteral
- United States Pharmacopeia guidance on compounding and FDA Compliance Policy Guidelines
- techniques and principles used to prepare and dispense individual extemporaneous prescriptions, including dating of compounded dosage forms
- liquid (parenteral, enteral), solid, semi-solid, and topical preparations
- dosage form preparation calculations
- sterile admixture techniques
  - United States Pharmacopeia (USP) Chapter 797
  - stability and sterility testing and dating

    o   clean room requirements
    o   infusion devices and catheters

Social/Behavioral/Administrative Pharmacy Sciences

Health Care Delivery Systems
- introduction to United States, state, and local health care delivery systems and their interfaces
- social, political, and economic factors of the U.S. health care delivery system
- principles that influence the distribution of pharmaceutical products and services
- role of public and private insurers, pharmaceutical industry, and managed care on health care delivery in the United States
- Medicare and Medicaid
- Indigent care programs
- incidence of and problems associated with drug overuse, underuse, and misuse in the U.S. health care system
- new models of care, including integrated care systems, medical home models of care, accountable care organizations

Economics/Pharmacoeconomics
- economic principles in relation to pharmacoeconomic analysis
- concepts of pharmacoeconomics in relation to patient care
- applications of economic theories and health-related quality-of-life concepts to improve allocation of limited health care resources

Practice Management
- leadership development
- management of transformational change
- emotional intelligence for leaders
- creating/implementing shared mission and vision
- management principles (planning, organizing, directing, and controlling resources) applied to various pharmacy practice settings and patient outcomes
- management of staff within the practice setting, including pharmacists, technicians, and other supportive personnel
- principles of planning, organizing, directing, and controlling pharmacy resources.
- tools, including informatics, needed to assess and address change, increase competitiveness, improve quality, and optimize patient services
- basic drug procurement process
- integration of clinical and distributive functions with medication therapy management and other patient care services
- management of medication use safety systems

- strategies to improve continuity of patient care as patients move between health care settings
- marketing principles
- public/population health principles
- basic accounting principles
- infection control
- project management
- managing and improving the medication-use process
- third-party administration and managed care systems
- health care improvement mechanisms at the micro- and macro-system levels

Pharmacoepidemiology
- application of principles of epidemiology to the study of drug use and outcomes in large populations
- studies that provide an estimate of the probability of beneficial effects in populations, or the probability of adverse effects in populations, and other parameters relating to drug use benefit
- methods for continual monitoring for unwanted effects and other safety-related aspects of drugs

Pharmacy Law and Regulatory Affairs
- legal basis of pharmacy practice
- pharmacist's responsibilities and limits under the law
- pharmacist's role in reducing liability by reducing drug-related misadventure
- civil versus criminal liability
- business contract law

History of Pharmacy
- overview of the evolution of pharmacy as a distinct profession
- moving from focus on the drug to focus on the patient and the drug, including clinical pharmaceutical care and other aspects of patient-provided pharmacist care
- major milestones and contributors in the evolution of pharmacy

Ethics
- principles of professional behavior
- ethical issues related to the development, promotion, sales, prescription, and use of drugs
- dealing with ethical dilemmas
- conflict of interest
- ethical issues in delivery of patient-centered care and clinical research

- principles of end-of-life care
- ethical issues in teamwork

Professional Communication
- effective verbal and written interpersonal communication
- health literacy
- communicating with diverse patients, families, pharmacists, and other health professionals in a variety of settings, both individually and as a member of a team
- interviewing techniques
- active listening and empathy
- assertiveness and problem-solving techniques
- cultural influences on communication of health information
- group presentation skills
- strategies for handling difficult situations
- documentation of pharmacist recommendations and consultations
- principles of behavior modification
- communicating research and clinical findings to interprofessional and interdisciplinary audiences

Social and Behavioral Aspects of Practice
- pharmacy as a patient-centered profession
- patient and other health care provider perceptions of pharmacists' capabilities
- role of the pharmacist related to patient care
- role of the pharmacist related to interaction with other health care professionals
- development of leadership skills
- importance of involvement in pharmacy organizational, regulatory, state, and federal issues

Informatics
- basic terminology (data, information, knowledge, hardware, software, networks, information systems, information systems management)
- reasons for systematic processing of data, information and knowledge in health care
- use of data in continuous quality improvement initiatives
- the benefits and current constraints in using information and communication technology in health care

Clinical Sciences

Pharmacy Practice and Pharmacist-Provided Care
- overview of the pharmacy profession

- issues of contemporary practice
- emerging and unique roles for the pharmacist on the health care team
- concepts of pharmacist-provided patient care and medication therapy management services
- principles of pharmacist-managed, patient-centered pharmacy services
- methods of outcome monitoring and assessment techniques
- problem identification (e.g., duplication, dosage, drug interactions, adverse drug reactions and interactions, frequency, dosage form, indication mismatches) and resolution
- role of pharmacy care plans in patient care
- interprofessional team decision making and care provision
- monitoring for positive and negative drug therapy outcomes
- evidence-based practice and decisions
- identifying pharmacotherapeutic knowledge gaps in the professional literature
- principles of clinical management of drug toxicity and overdosage
- home diagnostic devices
- durable medical equipment

Medication Dispensing and Distribution Systems
- preparation and dispensing of prescriptions
- development and maintenance of patient medication profiles
- identification and prevention of medication errors
- identification and prevention of drug toxicity
- issues of distribution systems associated with all types of practice settings
- role of automation and technology in workload efficiency and patient safety
- assurance of safety in the medication-use process
- medication error reduction programs
- continuous quality improvement programs

Pharmacotherapy
- principles of clinical practice guidelines for various disease states and their interpretation in the clinical setting
- integration of core scientific and systems-based knowledge in patient care decisions
- reinforcement of basic science principles relative to drug treatment protocols and clinical practice guidelines
- evaluation of clinical trials that validate treatment usefulness
- application of evidence-based decision making to patient care
- drug monitoring for positive and negative outcomes
- diagnostic tests in the diagnosis, staging, and monitoring of various disease states

- concepts of pain management and palliative care
- promotion of wellness and non-pharmacologic therapies
- disease prevention and monitoring
- nonprescription drug therapies
- dietary supplements
- design of patient-centered, culturally relevant treatment plans
- drug-induced disease
- medication reconciliation for patients moving from one care setting to another

Pharmacist-Provided Care for Special Populations
- pathophysiologic and pharmacotherapy alterations specific for special population patients (e.g., pediatric, geriatric, pregnant, cystic fibrosis, sickle cell anemia, celiac disease, genetic disorders, and others) for prescription and nonprescription medications
- dosage calculation and adjustments in special-population patients
- drug monitoring for positive/negative outcomes in special-population patients

Drug Information
- fundamentals of the practice of drug information
- application of drug information skills for delivery of pharmaceutical care
- technology of drug information retrieval for quality assurance
- the ability to judge the reliability of various sources of information

Medication Safety
- causes of medication errors/systems approaches
- human factors in errors
- strategies for reducing errors
- pharmacy leadership in medication safety
- current National Patient Safety Goals as they relate to medication use
- organizations devoted to assurance and advancement of quality health care (e.g., Joint Commission)
- quality and improvement strategies, such as failure mode and effects analysis, root cause analysis, and lean principles

Literature Evaluation and Research Design
- fundamentals of research design and methodology
- principles of evaluation of the primary literature
- practical implications of the primary literature
- principles of research design and analysis in practicing evidence-based pharmacy
- levels of clinical evidence

- regulatory and ethical principles for research

Patient Assessment Laboratory
- obtaining a comprehensive patient history
- familiarity with basic assessment techniques (inspection, palpation, percussion, auscultation), terminology, and the modifications caused by common disease states and drug therapy
- triage and referral skills
- knowledge of therapeutic drug concentrations and their interpretation
- knowledge of the basis for common clinical laboratory values and diagnostic tests and the influences of common disease states
- false positive and false negative results
- OTC point-of-care testing devices (e.g., glucometers, pregnancy tests, home testing for HbA1c, drug screening)
- principles of electrocardiography and common EKG abnormalities
- advanced cardiac life support

Elective Courses

- Multiple opportunities should be provided throughout the curriculum for students to take course work designed to develop areas of personal interest, to expand their understanding of professional opportunities, and to achieve the outcomes of the curriculum.

Appendix C

Additional Guidance on Pharmacy Practice Experiences

The following information is a compilation of comments received from ACPE stakeholders relative to pharmacy experiential education. As with Appendix B, the information is provided as a basis for curricular reflection and continuous quality improvement, driven by the mission and goals of the college or school.

General Guidance

The pharmacy practice experiences should:
- ensure that every student has multiple opportunities to perform patient-centered care activities in a variety of settings
- be in-depth, structured, and carefully coordinated with other components of the curriculum
- require active participation and patient care responsibilities, in a progressive fashion, designed to develop the practice skills, judgment, professional behavior, attitudes and values, confidence, and personal responsibility needed for each student to embark on an independent and collaborative practice

The development of the desired student competencies should occur in a progressive manner and involve experiences in a variety of practice settings in which pharmacists work as partners with patients, physicians, nurses, other health care professionals, and administrators.

General objectives and learning modules, as well as site-specific learning objectives, should be established for all of the pharmacy practice experiences. The objectives for the pharmacy practice experiences should identify the competencies to be achieved, expected types of patients (if applicable), level of student responsibility, and setting needed for the objectives to be met. The college or school should specify, for those pharmacy practice experiences involving direct patient care, the major disease states/conditions that all students are expected to encounter. The college or school should also specify the extent of student interaction with patients and the settings in which the interactions will occur.

Specific criteria should be developed to enable faculty and students to assess progress midway through the experience and at its completion. Students should be provided the opportunity to demonstrate achievement of stated competencies as assessed through the use of reliable, validated criteria.
Educational experiences in the same practice area, for example, community pharmacy, should result in comparable educational objectives and competencies in students, especially in the Advanced Pharmacy Practice Experiences.

**ACCREDITATION STANDARDS AND GUIDELINES FOR THE
PROFESSIONAL PROGRAM IN PHARMACY LEADING TO THE DOCTOR
OF PHARMACY DEGREE
ADOPTED: JANUARY 15, 2006**
GUIDELINES 2.0: JANUARY 23, 2011

Oversight of Pharmacy Practice Experiences

The experiential director, or equivalent person responsible for oversight and quality assurance of the pharmacy practice experience component of the curriculum, should have sufficient practice, academic, and management expertise to have credibility with other faculty and practitioners, as well as to direct the program in a manner that facilitates the college or school's ability to influence advancement of the practice of pharmacy. The college or school should ensure that the person has the appropriate expertise, support, and authority to evaluate, identify deficiencies if applicable, and implement change where needed. The person should serve on, or be *ex-officio* to, key committees where their input is most effective.

Colleges and schools should have systems, such as computerized programs, to manage the pharmacy practice experiences.

Important factors to be considered and assessed to ensure the desired outcomes are the number of students each preceptor and/or site is assigned; the nature, dynamics, and other responsibilities of the practice site; the experience and other commitments of the preceptor; the specific objectives of the experience; the potential benefit of student-to-student interaction and collaboration; and the instructional methodologies employed.

The college or school should obtain assessment of qualities and performance of preceptors from students in a manner that would not adversely affect the grading process. The methods of assessment and reporting employed should promote the development within the student of the ability to offer constructive criticism in a manner appropriate to interprofessional relationships. The assessment should include each preceptor's:
- ability to facilitate learning
- communication skills
- quality as a professional role model
- effectiveness related to pharmacy education

The quality control procedure employed should use a variety of methods, such as use of a review committee consisting of practitioners, faculty, and students, and visits to and communications with experiential sites conducted by trained individuals.

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Preceptors

The college or school should identify preceptors who will be positive role models for students and who, in general, demonstrate the following behavior, qualities, and values (as applicable to their area of practice):

- practice ethically and with compassion for patients
- accept personal responsibility for patient outcomes
- have professional training, experience, and competence commensurate with their position
- utilize clinical and scientific publications in clinical care decision making and evidence-based practice
- have a desire to educate others (patients, care givers, other health care professionals, students, pharmacy residents)
- have an aptitude to facilitate learning
- be able to document and assess student performance
- have a systematic, self-directed approach to their own continuing professional development
- collaborate with other health care professionals as a member of a team
- be committed to their organization, professional societies, and the community

In general, preceptor training should include:

- orientation to the college or school's mission, goals, and values
- review of the college or school's curriculum and teaching methodologies
- review of the specific objectives for the pharmacy practice experiences
- guidance regarding the assessment of students' prior knowledge and experience relative to the rotation's objectives so that the preceptor may tailor the rotation to maximize the educational experience and ensure appropriate student interaction with patients and their care givers and other health professionals, if applicable
- review of the college or school's performance assessment and grading systems

Introductory Pharmacy Practice Experiences

The introductory pharmacy practice experiences may use various formats, including:

- shadowing of practitioners or students on advanced pharmacy practice experiences
- interviews with real patients
- simulation
- service learning (see below)
- real practice experiences in community, institutional, long-term care pharmacies, etc.

In this regard, colleges and schools are encouraged to identify or develop introductory pharmacy practice experiences that consistently expose students to and allow participation in activities such as, but not limited to:

- processing and dispensing new/refill medication orders
- conducting patient interviews to obtain patient information
- creating patient profiles using information obtained
- responding to drug information inquiries
- interacting with other health care professionals
- participating in educational offerings designed to benefit the health of the general public
- interpreting and evaluating patient information
- triaging and assessing the need for treatment or referral, including referral for a patient seeking pharmacist-guided self-care
- identifying patient-specific factors that affect health, pharmacotherapy, and/or disease state management
- assessing patient health literacy and compliance
- performing calculations required to compound, dispense, and administer medications
- administering medications
- evaluating appropriateness of medication dosing utilizing basic dosing principles
- providing point-of-care and patient-centered services
- conducting physical assessments
- preparing and compounding extemporaneous preparations and sterile products
- communicating with patients and other health care providers
- interacting with pharmacy technicians in the delivery of pharmacy services
- documenting interventions in patient records in a concise, organized format that allows readers to have a clear understanding of the content
- presenting patient cases in an organized format covering pertinent information
- billing third parties for pharmacy services

In accordance with its policies and procedures and using established criteria, a college or school may exempt applicable students from the requirements of certain introductory pharmacy practice experiences, provided that the college or school has assessed or otherwise validated that the student has achieved the desired outcomes of that experience through an alternative experience acceptable to the college or school.

Service Learning: Service learning experiences[21] *per se,* although beneficial in developing desirable student attitudes and values, do not necessarily qualify as

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[21] Service learning is a structured learning experience with clearly defined objectives that combines performing service in the community with preparation, reflection, and discussion.

introductory pharmacy practice experiences unless they specifically include the activities described above. The college or school may use such experiences to complement the introductory pharmacy practice experiences. Colleges and schools using service learning activities, whether as part of the introductory pharmacy practice experiences or not, should ensure that, in general, such activities:

- meet a community need
- establish or enhance a relationship between the community and the academic institution
- help foster civic and professional responsibility and the development of a sense of caring for others
- are integrated into the required academic curriculum
- provide structured time to reflect on the service learning experience
- enhance what is taught in the didactic curriculum by extending student learning beyond the classroom and into the community
- provide opportunities for interaction with other health professional students and practitioners
- attempt to balance the service that is provided and the learning that takes place

[**Note**: Appendix D provides the American Association of Colleges of Pharmacy document *Pre-APPE Performance Domains and Abilities* as guidance for assessment of student capabilities before entering advanced pharmacy practice experiences.]

Advanced Pharmacy Practice Experiences

Most of the time assigned for students in advanced pharmacy practice experiences should involve direct patient care. Direct patient care experiences should be of sufficient length to provide both continuity of patient care and an opportunity for the student to practice the competencies associated with that practice setting. The series of required and elective experiences should be coordinated to achieve, in composite, the experiential whole of the advanced pharmacy practice experiences. Where possible, practice experiences should be offered in academic health centers to provide students with the opportunity to encounter and participate in innovative health care delivery and treatment.

Colleges and schools are encouraged to identify or develop advanced pharmacy practice experiences that consistently allow students to perform activities that build upon those activities listed for the introductory pharmacy practice experiences. In general, and where legally permitted, activities in which students should participate during required advanced pharmacy practice experiences include, but are not limited to:

- practicing as a member of an interprofessional team
- identifying, evaluating, and communicating to the patient and other health care professionals the appropriateness of the patient's specific pharmacotherapeutic

agents, dosing regimens, dosage forms, routes of administration, and delivery systems
- consulting with patients regarding self-care products
- recommending prescription and nonprescription medications, dietary supplements, diet, nutrition, traditional nondrug therapies, and complementary and alternative therapies
- recommending appropriateness medication dosing utilizing practical pharmacokinetic principles
- administering medications where practical and consistent with the practice environment and where legally permitted
- identifying and reporting medication errors and adverse drug reactions
- managing the drug regimen through monitoring and assessing patient information
- providing pharmacist-delivered patient care to a diverse patient population
- providing patient education to a diverse patient population
- educating the public and health care professionals regarding medical conditions, wellness, dietary supplements, durable medical equipment, and medical and drug devices
- retrieving, evaluating, managing, and using clinical and scientific publications in the decision-making process
- accessing, evaluating, and applying information to promote optimal health care
- ensuring continuity of pharmaceutical care among health care settings
- participating in discussions and assignments regarding compliance with accreditation, legal, regulatory/legislative, and safety requirements
- participating in discussions and assignments regarding the drug approval process and the role of key organizations in public safety and standards setting
- participating in discussions and assignments concerning key health care policy matters that may affect pharmacy
- working with the technology used in pharmacy practice

Additional activities in which students should be able to participate during required community and hospital/health system advanced pharmacy practice experiences may include, as appropriate to the learning environment:
- preparing and dispensing medications
- managing systems for storage, preparation, and dispensing of medications
- allocating and using key resources and supervising pharmacy technical staff
- participating in purchasing activities
- creating a business plan to support a patient care service, including determining the need, feasibility, resources, and sources of funding
- managing the medication use system and applying the systems approach to medication safety
- participating in the pharmacy's quality improvement program

- participating in the design, development, marketing, and reimbursement process for new patient services
- participating in discussions and assignments of human resources management, medication resources management, and pharmacy data management systems, including pharmacy workload and financial performance
- participating in the pharmacy's planning process
- conducting a drug use review
- managing the use of investigational drug products
- participating in the health system's formulary process
- participating in therapeutic protocol development
- participating in the management of medical emergencies
- performing prospective and retrospective financial and clinical outcomes analyses to support formulary recommendations and therapeutic guideline development

Additional activities in which students should be able to participate during required ambulatory care and acute/general medicine advanced pharmacy practice experiences may include, as appropriate to the learning environment:
- developing and analyzing clinical drug guidelines
- participating in the health system's formulary process
- participating in the design, development, marketing, and reimbursement process for new patient services
- participating in discussions of human resources management, medication resources management, and pharmacy data management systems including pharmacy workload and financial performance

Elective Courses

- Multiple opportunities should be provided throughout the curriculum for students to undertake pharmacy practice experiences designed to develop areas of personal interest, to expand their understanding of professional opportunities, and to achieve the outcomes of the curriculum.

Appendix D

Pre-Advanced Pharmacy Practice Experiences Performance Domains and Abilities

[The enclosed guidance for assessment of student capabilities before entering advanced pharmacy practice experiences is extracted (minor edits) from the American Association of Colleges of Pharmacy document *Pre-APPE Performance Domains and Abilities* (see: http://www.aacp.org/governance/SECTIONS/experientialeducation/Documents/PreAPPE %20Performance%20Domains%20and%20Abilities_November%202010.pdf).]

The domains and ability performance statements … represent the working group's consensus concerning which performances are "must have" abilities. Evidence of student achievement of abilities and competencies within these core domains reflect student readiness to enter Advanced Pharmacy Practice Experiences (APPE's). Each domain has one or more suggested ability statement(s) (knowledge, skill, attitudes/values/or behavior) that must be achieved and documented prior to entering Advanced Pharmacy Practice Experiences (APPE's). Each domain also has suggested EXAMPLE competencies (where a competency statement consists of one or more of the three elements of an ability statement) that can be utilized to demonstrate student achievement of the domain ability. There is some overlap in these competency statements which is a reflection of how different colleges/schools and their faculties decide to approach each core domain. Therefore it is not expected that every college or school will demonstrate student achievement of every performance competency statement in this document…, but rather will use the domain-specific ability statements, the example performance competency statements, the "IPPE Competency Task Force Report" (see:http://www.aacp.org/governance/SECTIONS/pharmacypractice/Documents/Report on AACP Task Force on **IPPE** Competencies.pptx) competency statements, and other AACP Reports and literature for guidance in determining their own student performance objectives for each of the core domains.

It is expected that every college/school will demonstrate their students' achievement of the core ability(ies) in each domain through the use of multiple performance assessments compatible with their own experiential learning system. Recognizing the need for educational flexibility and creativity, it is anticipated that while many of these abilities can and will be achieved during Introductory Pharmacy Practice Experiences (IPPE's), colleges/schools will have multiple learning approaches in addition to IPPE's to achieve learning of and documentation of student performance of the domain abilities. These approaches may include, but are not limited to, simulations, OSCE's, and practice laboratories. It is also anticipated that each college/school may have additional student performance competencies they desire that their students achieve within each core domain or have additional "non-core" domains they want their students to achieve.

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These pre-APPE core domains and ability statements also provide a basis for development of core Advanced Pharmacy Practice Experience core domain abilities and competencies.

Core Domains:
1. **Patient Safety - Accurately Dispense Medications (order fulfillment):**

   Ability Statement: Demonstrate a commitment to and a valuing of patient safety by assuring accurate preparation, labeling, dispensing and distribution of prescriptions and medication orders.

   Maps to 2004 CAPE Outcome I: Provide Pharmaceutical Care to Achieve Optimal Patient Outcomes; and 2007 Pharmacy Practice Supplemental Outcomes II-B: Accurately prepare and dispense medications and/or supervise the preparation of medications and II-C: Accurately compound individual or bulk

   EXAMPLE Performance competencies:
   - Accurately prepare and dispense medications or supervise the preparation of medications
   - Evaluate the acceptability and accuracy of a prescription and verify that the information is correct then correctly prepare the prescription and label for dispensing
   - Evaluate appropriateness of medication orders by correlating the order with patient-specific data and drug information.
   - Compound parenteral and non-parenteral drug products using accurate calculations, pharmaceutical components, and techniques.
   - Dispense medications and devices in accordance with legal requirements.
   - Provide safe, accurate and time-sensitive medication distribution
   - Appropriately compound, dispense, or administer a medication, pursuant to a new prescription, prescription refill, or drug order.
   - Accurately process and dispense medication pursuant to a new prescription, prescription refill, or drug order.
   - Accurately evaluate and process a new prescription, prescription refill, and medication order in accordance to the law.
   - Determine appropriate storage of compounded medications before and after dispensing.

2. **Basic Patient Assessment**

   Ability Statement: Collect record and assess subjective and objective patient data to define health and medication-related problems. Patient information must be collected in a manner demonstrating knowledge of patient educational level, the

unique cultural and socioeconomic situations of patients, and comply with requirements for patient privacy.

Maps to 2007 Pharmacy Practice Supplemental CAPE Outcome I-A: Provide Pharmaceutical Care to Achieve Optimal Patient Outcomes: Compile Patient-Specific Information

EXAMPLE Performance competencies:

- Collect patient histories in an organized fashion, appropriate to the situation and inclusive of cultural, social, educational, economic, and other patient-specific factors affecting self-care behaviors, medication use and adherence
- Obtain, record, and interpret a history from a patient to minimally include drug allergies and reactions, drugs (prescription, OTC, and herbal) being taken, doses being used, cultural, social, educational, economic, and other patient-specific factors affecting self-care
- Patient Assessment: Obtain and interpret patient information to determine the presence of a disease, medical condition, or drug-related problem(s), and assess the need for treatment and/or referral.
- Gather and organize accurate and comprehensive patient specific information
- Obtain and interpret patient information, inclusive of cultural, social, educational, economic, and other patient-specific factors affecting self-care behaviors, medication use and adherence to determine the presence of a disease, medical condition, or drug-related problem(s). , including a basic medication history from a patient to include drug allergies, a description of allergic reactions, drugs being taken, doses being used, over the counter medications being taken, and herbal/natural products being used.
- Obtain accurate and comprehensive patient history (include drug allergies, a description of allergic reactions, drugs being taken, doses being used, over the counter medications being taken, herbal/natural products being used, self care behaviors, and adherence)
- Gather information necessary to evaluate patient drug therapy (both patient history and utilization of a chart)
- Record all patient information accurately, legally and succinctly
- Perform a basic review of a patient's medication profile to identify medication allergies, correct doses, duplicate medications, and important drug interactions.
- Obtain and accurately record a patient's health and medication history.
- Gather and accurately record a patient's health and medication information from his/her medical record.
- Evaluate patient information to determine the presence of a disease, medical condition, or drug-related problem(s), and assess the need for treatment and/or referral.

- Evaluate a patient's medication profile to identify medication allergies, appropriate doses and sigs, duplicate medications, and clinical relevant drug interactions.
- Identify and prioritize a patient's drug-related problems

3. Medication Information

Ability Statement: Demonstrate knowledge of and accept responsibility for that knowledge of commonly used medications, formulations and drug products.

Maps to 2004 CAPE Outcomes II-A-V: Maintain professional competence by identifying and analyzing emerging issues, products, and services that may impact patient-specific therapeutic outcomes and 2007 Pharmacy Practice Supplemental Outcome V: Maintain professional competency in providing pharmaceutical care by committing oneself to being an independent, self-initiated life-long learner

EXAMPLE Performance competencies
- Summarize key information related to the use of common (Top 200) medications
- Identify brand and generic names, dosage forms and usual dosing ranges for common (Top 200) medications
- Describe the mechanism of action of common medications (Top 200 medications) at the molecular, cellular, systems, and whole organism levels
- List and describe the mechanism(s) of common drug interactions.
- Cite the spectrum and common indications for commonly used antibiotics
- Identify target drug concentrations for Narrow Therapeutic index drugs.
- Determine the appropriate storage of compounded medications before and after dispensing

4. Identification and Assessment of Drug related Problems

Ability Statement: Correlate drug related variables and patient related variables to identify and assess drug related problems. Evaluate how the unique characteristics of patients and patient populations impact on manifestations of drug-related problems

Maps to CAPE Outcome I-A: Provide Pharmaceutical Care to achieve optimal patient outcomes; Provide Patient-centered care and 2007 Pharmacy Practice Supplemental Outcome I-A: Gather and organize accurate and comprehensive patient information to identify ongoing or potential drug therapy problems.

EXAMPLE Performance competencies:
- Evaluating medication orders to identify drug related problems
- Assess the urgency and risk associated with identified drug related problems
- Evaluate patient information and medication information that places a patient at risk for developing drug-related problems

5. **Mathematics applied to pharmaceutical calculations, compounded medications, dose calculations, and applications of pharmacokinetic calculations.**

Ability Statement: Utilize pharmaceutical and pharmacokinetics mathematics to perform accurate medication calculations. Value the importance of total accuracy in performing and applying these calculations.

Maps to 2004 CAPE Outcome I-A: Provide Patient-Centered Care and 2007 Pharmacy Practice Supplemental Outcomes I-B: Interpret and evaluate patient and drug-related data needed to identify actual or potential drug therapy problems (prescription and non-prescription) I-B-4: Perform any additional patient calculations needed

EXAMPLE Performance competencies
- Perform accurate pharmaceutical calculations, especially involved in the preparation of compounded oral, topical, rectal, ophthalmic, or parenteral preparation, and pharmacokinetic calculation of appropriate doses.
- Apply mathematical principles (e.g., accurately perform dose calculations, kinetics) in pharmacy practice

6. **Ethical, Professional, and Legal Behavior:**

Ability Statement: In all health-care activities, demonstrate knowledge of and sensitivity towards the unique characteristics of each patient. Comply with all federal, state, and local laws related to pharmacy practice. Demonstrate ethical and professional behavior in all practice activities.

Maps to CAPE Outcome I-B-4: Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines:

EXAMPLE Performance competencies:
- Professionalism: Demonstrate caring, ethical, and professional behavior when interacting with peers, professionals, patients, and caregivers.
- Demonstrate sensitivity and responsiveness to culture, race/ethnicity, age, socioeconomic status, gender, sexual orientation, spirituality, disabilities, and

other aspects of diversity and identity when interacting with patients, caregivers, and other health care professionals.

- Comply with federal, state and local laws and regulations related to pharmacy practice
- Practice ethically, including maintaining patient confidentiality, responding to errors in care and professional misconduct (including plagiarism)
- Comply with federal, state and local laws and regulations related to pharmacy practice
- Maintain professional and ethical behavior in all practice environments, demonstrating ethical practice, empathy, cultural sensitivity, and professional communications in compliance with all laws, regulations, and professional standards.
- Professionalism: Demonstrate empathy, assertiveness, effective listening skills, and self-awareness.
- Demonstrate professional and ethical behavior in all practice environments
- Apply legal and regulatory principles to medication distribution, use and management systems
- Accept responsibility for patient care
- Make and defend rational, ethical decisions within the context of personal and professional values
- Demonstrate empathy, assertiveness, effective listening skills, and self-awareness.

7. **General Communication Abilities**

Ability Statement: Demonstrate effective communication abilities in interactions with patients, their families and care givers, and other health care providers. Communication should be consistent with education level, cultural issues, and be empathetic. Elicit feedback validating understanding of communication.

Maps to CAPE Outcome I-A-2: Communicate and collaborate with prescribers, patients, care givers, and other involved health care providers to engender a team approach to patient care; and II-A-2: Communicate and collaborate with patients, prescribers, other health care providers, and administrative and supportive personnel to engender a team approach to assure efficient, cost-effective utilization of human, physical, medical, informational, and technological resources in the provision of patient care; and 2007 Pharmacy Practice Supplemental Outcome I-E-3: Consider social, economic, and cultural factors that influence a patient's perspective on health, illness, and medication use.

EXAMPLE Performance competencies:
- Communicate effectively using appropriate verbal, non-verbal, and written communication at a suitable level) with patients, caregivers, and other health care providers, at a suitable level for the partner in the interaction, to engender a team approach to patient care.
- Demonstrate effective communication skills (verbal, non-verbal, and written) at an appropriate level for patients, caregivers, health care providers, and the general public.

8. **Counseling Patients:**

Ability Statement: Provide effective health and medication information to patients and/or care givers and confirm patient and/or care giver understanding of the information being provided.

Maps to CAPE Outcome I-A: Provide Patient-centered care and Pharmaceutical Care to achieve optimal patient outcomes; and 2007 Pharmacy Practice Supplemental Outcomes IV-G: Educate patients and/or caregivers about drug therapy

EXAMPLE Performance competencies
- Use effective written, visual, verbal, and nonverbal communication skills to provide patient/caregiver self-management education
- Appropriately and accurately provide basic medication counseling to a patient or caregiver receiving a medication.
- Assess and validate the ability of patients and their agents to obtain, process, understand and use health- and medication-related information
- Counsel patients on proper self-care and preventative care
- Use appropriate methods of patient education to review indications, adverse effects, dosage, storage, and administration techniques
- Use effective written, visual, verbal, and nonverbal communication skills to provide education to the patient/caregiver on drug, drug use, self- or preventative care, or other health-related education to health care providers.
- Communicate alternative therapeutic strategies to the prescriber to correct or prevent drug-related problems.
- Assist a patient in correctly selecting an over the counter preparation.
- Develop and provide drug, drug use, or other health-related education to consumers or health providers
- Provide accurate response to drug information requests written and verbally.
- Use effective written, visual, verbal, and nonverbal communication skills to counsel and educate a patient or caregiver regarding appropriate medication use – prescription and self-care.

- Demonstrate and/or describe proper administration technique for various drug delivery systems (e.g., inhalers, eye drops, etc.)

9. **Drug Information Analysis and Literature Research**

   Ability Statement: Assess information needs of patients and health providers and apply knowledge of study design and literature analysis and retrieval to provide accurate, evidence-based drug information.

   Maps to 2004 CAPE Outcome I-A-3: Retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information to patients, their families, and other involved health care providers; and 2007 Pharmacy Practice Supplemental Outcome I-D: Retrieve, analyze, and interpret the professional, lay, and scientific literature to make informed, rational, and evidence-based decisions.

   EXAMPLE Performance competencies
   - Collect accurate and comprehensive drug information from appropriate sources to make informed, evidence-based, patient-specific or population-based decisions. (3)
   - Recognize the type of content that is available in general (tertiary), secondary, and primary information sources
   - Collect, summarize, analyze and apply information from the biomedical literature to patient-specific or population-based heath needs
   - Demonstrate utilization of drug information resources
   - Describe the type of content in commonly used drug and medical information resources.
   - Collect and interpret accurate drug information from appropriate sources to make informed, evidence based decisions.
   - Use effective written, visual, verbal, and nonverbal communication skills to accurately respond to drug information questions.

10. **Health and Wellness – Public Health**

    Ability Statement: Know and apply principles of health and wellness in provision of individual and population-based health and wellness information. Integrate unique characteristics of individuals and populations in design of health and wellness information.

    Maps to 2004 CAPE Outcome 3: Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an interprofessional team of health care providers.

EXAMPLE Performance competencies:
- Participate in activities that promote health and wellness and the use of preventive care measures
- Promote to patients the importance of health, wellness, disease prevention (e.g., immunizations, tobacco cessation counseling), and management of their diseases and medication therapies to optimize outcomes.
- Provide preventative health services (e.g., immunizations, tobacco cessation counseling)
- Public Health: Promote to patients the importance of health, wellness, disease prevention, and management of their diseases and medication therapies to optimize outcomes.

11. Insurance /Prescription Drug Coverage

Ability Statement: Utilizing knowledge of a wide array of private and public health insurance options assist patients and care givers to obtain their medications and related para-pharmaceuticals in an affordable manner that meets their health care needs.

Maps to 2007 Social and Administrative Sciences Outcomes 2-1-A: Identify the key features of private and public payers of heath care; and 2-1-B: Describe the objectives of health insurance and managed health care

EXAMPLE Performance competency:
- Assist a patient or caregiver in problems related to prescription medication coverage, health insurance, or government health care programs.