PHARM.D. STUDENT MANUAL
REQUIRED & ELECTIVE ADVANCED PHARMACY PRACTICE
EXPERIENCES (APPEs)
2021 – 2022

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Section I: Course Details

A. Course Description

The 4th professional year of the Doctor of Pharmacy program consists of four 4-weeks Required Advanced Pharmacy Practice Experiences (APPEs) in the U.S. and five calendar months of Elective APPEs in Lebanon.

Four required APPEs in the United States:
- PHA 670: Ambulatory Care
- PHA 671: Community Pharmacy
- PHA 672: Hospital or Health System Pharmacy
- PHA 673: Inpatient/Acute Care General Medicine

Elective APPEs in Lebanon:
- PHA 650A: Academic Teaching
- PHA 650B: Cardiology/CCU
- PHA 650C: Critical Care
- PHA 650D: Discharge Medication Counseling
- PHA 650E: Emergency Medicine
- PHA 650F: Endocrinology
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- PHA 650R: Ambulatory Care (Makhzoumi Foundation)
- PHA 650S: Internal Medicine/Heme Onc
- PHA 650T: Internal Medicine/Infectious Diseases
- PHA 650U: Antimicrobial Stewardship
- PHA 650V: Geriatrics
- PHA 650W: Specialty Pharmacy
- PHA 650X: Health Economics and Outcomes Research

B. Course Relevance

The APPEs are designed to support the achievement of the professional competencies presented in the ACPE Standard No. 12:
1. Provide patient-centered care plan

2. Provide population-based care, through the ability to develop and implement
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. Demonstrate expertise in informatics.
10. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
11. Maintain professional competence by identifying and analyzing emerging issues, products, and services.

The APPEs will 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 will be detailed in the respective syllabi.

C. Learning Objectives

Each experiential education rotation has its own learning objectives as detailed in the rotation syllabus. Students should become familiar with the specific learning objectives in the course of orientation to the experience and site. Learning objectives are based on the Center for the Advancement of Pharmacy Education's Educational Outcomes 2013 and the 2016 Accreditation Council for Pharmacy Education's Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree, The AACP essential elements for core APPEs and the PPCP Model: https://jcpp.net/patient-care-process/.
At least 7 out 9 rotations must involve clinical/direct patient care activities.

D. Methods of Education

The student will actively participate in pharmacy practice under the supervision of a preceptor who will guide the student's experience in different pharmacy practice settings.
Preceptors should provide close supervision of, individualized instruction, one-on-one guidance, significant interaction with students, case discussions, and assessment of student performance and critical thinking and provide role-modeling to students in pharmacy practice.

Section II: Experiential Education Sites

A. Hospitals
- Houston Methodist, Houston, TX, U.S.A
- Hopital Libanais Geitaoui Centre Hospitalier Universitaire, Ashrafieh
- Lebanese American University Medical Center-Rizk Hospital, Achrafieh, Beirut
- Makassed General Hospital, Mazraa, Tareek Al-Jadida, Beirut

B. Community Pharmacies
- Walgreens Pharmacy, Houston, TX, USA
    o Buffalo Speedway Location
    o Hermann Location
    o Houston Methodist Location
    o Kirby Location
    o Saint Luke's Location

Section III: Regulations

A. Attendance
1. Students are expected to be at their assigned rotation site for a minimum of nine hours per day: Monday through Friday from 7:30 AM – 4:30 PM or later.
   Time of arrival and departure may vary among sites, according to services and patient care rounds. Students should refer to their preceptors for rotation specific guidance.
2. Absences from rotations must be made up via an internal petition for experiential education (rearrangements made with preceptor) within the period of the assigned rotation (e.g. If you miss a day, you will come to the hospital the following Saturday). An incomplete grade will be given until you make-up the missed rotation days. When any absence occurs, the preceptor will notify the Director of Experiential Education and the Chair of Pharmacy Practice Department. Absences of 40 hours or more during a rotation may result in repeating the APPE at a later time.
3. Preceptor must be contacted personally as soon as possible in the event a student cannot report to the assigned site on a given day with the reason for absence. The preceptor may excuse the student for valid reasons (illness, family death, and accidents). Personal plans (vacations, picnics, weddings, parties, etc.) are NOT valid reasons for excuse and will not be accepted. All excused absences and the respective make-ups will be recorded for the student.
4. Each failure to notify the preceptor will result in up to 10% deduction of the final grade, which translates into a drop of up to one letter grade. Each failure to show up for the make-up will result in a 10% deduction which translates into a drop of one letter grade.
5. Students shall be required to attend all medical team activities (including morning and afternoon rounds) unless specifically excused by the preceptor. Any student missing these activities without preceptor permission will receive up to 10% deduction on final grade.
6. Students who arrive late or leave early to/from the hospital without the preceptor knowledge will receive up to 10 % deduction on the final grade and any repetition of the aforementioned activities will result in 5% deduction on the final grade on each repetition.
7. Students rotating in the United States will only observe U.S. Holiday Calendar.
8. Students rotating in Lebanon will observe LAU Academic Calendar.

B. Student Professionalism

During the clinical pharmacy practice experiences, students are expected to maintain the highest standard of professional behavior. This means:

1. *Appearance and Personal Attire*
   a. Students should wear, at all times, a white lab coat, fully buttoned, with nametag that indicates "Pharmacy Student-LAU".
   b. No jeans, sneakers, or tennis shoes are allowed. Failure to comply, students will be asked to go home to change and make-up for the missed time of going home.
   c. Men should wear slacks and ties, and women should be appropriately and conservatively dressed. Comfortable walking shoes are suggested. No open toe shoes allowed for women.
   d. Bags cannot be carried on rounds. Provision will be made depending on the site for storage of coats, bags etc. It is suggested that valuables not to be taken to the site.
   e. All students must demonstrate adequate personal hygiene.

2. *Psychosocial Skills*
   a. Students must interact/communicate politely and tactfully with preceptors, healthcare providers, staff and patients to engender a team approach to patient care. Likewise, students are expected to interact with other students professionally and with courtesy.
   b. Students should expect to be treated professionally and with courtesy by faculty, preceptors and other healthcare providers.
   c. Students and preceptors should attempt to resolve misunderstandings in a constructive manner.
   d. Students should not hesitate to ask for assistance and/or clarification as needed from the preceptor. Mistakes due to overconfidence or failure to obtain clarification will be considered unprofessional conduct. Knowledge and acceptance of one's limitations is a vital skill.
   e. Please refer to Domain IV on Personal and Professional Development (CAPE 2013).

C. Observance of Hospital Rules and Regulations

All rules and regulations pertaining to the hospital must be observed. These will be explained at a briefing by the preceptor at the site. Improper conduct may result in disciplinary action by the school and university.

D. Confidentiality

Medical records (charts) are private and legal documents. While medical records are used and handled in the course of work, it should be remembered that confidentiality is a must.
1. No writing or marks of any kind should be made on medical records (hard copy or electronic) unless authorized by the preceptor.
2. No names should be used in the preparation of written cases, notes, or monitoring sheets.
3. Discussion of any patient information designated outside patient care areas such as in elevators, hallways, and cafeteria is strictly prohibited.
4. Taking photos (as a way of gathering data for case discussions) of patients' medical records using smart phones, and sharing patient information on social media forum is strictly prohibited.
5. Medical records must not be removed from the nursing station area.

6. Students may request to review charts from the medical records department as long as authorized by the preceptor or pharmacy preceptor at the practice site.
7. Pharmacy students in experiential courses in health system and community pharmacy practice sites in the U.S. and in Lebanon must abide by the Health Insurance Portability and Accountability Act (HIPAA).
8. All P4 students are expected to have completed an online HIPAA training and OSHS training in P2 and signed a confidentiality letter as required by the practice site.

Breaches of confidentiality can result in disciplinary action by the school and university.

E.   Conflict of Interest

The School of Pharmacy strives to avoid circumstances or relationships that could adversely affect the student/faculty relationship and the desired outcomes.

To avoid any conflicts of interest, the following rules will be adhered to:
1. A student will NOT be placed in a practice site where the student has is remunerated or is a relative of the site preceptor.
2. A student will NOT be placed in a practice site where a student's relative provides supervisory authority over a preceptor.
3. A student must report to the Director of Experiential Education any other potential conflicts of interest due to personal, financial or other relationships.
4. Failure to notify the Director of Experiential Education of potential conflict of interest will result in repeating the rotation.

F.   Compensation for Students

Students are not remunerated financially for experience training, but receive academic credit plus intern hour credit for each training period.

Section IV: Description of Activities

A. Patient Care Rounds

1. Attend and actively participate in ward rounds and attending rounds according to the schedule of the service.
2. Attend relevant grand rounds and medical conferences.
3. Interview and obtain medication histories from all patients assigned by the pharmacy preceptor.
4. In addition to CAPE Appendix, Domain I, Categories A & B, gather the following information including, but not limited to:
   a. Changes in patient status including: improved or worsened condition, discharge date, surgery, planned diagnostic procedures, and the results of those procedures.
   b. Changes in nondrug therapy (e.g. dietary, socioeconomic, physical therapy, respiratory, occupational therapy).

    c. Changes in medication therapy (e.g. new drug orders, discontinued orders, or changes in doses, route of administration, or duration).

    d. When chemotherapy, peri-operative medications, or intravenous solutions are needed.

    e. Patient's understanding of medication, name strength and expected benefits and toxicities.

    f. Projected discharge date, including any special teaching needs (e.g. home antibiotics or total parenteral nutrition).

    g. Communicate to the unit pharmacists any information gathered from rounds if they are unable to attend.

5. Monitor drug therapy of all assigned patients. Maintain an up-to-date data base on each assigned patient according to Domain I of the CAPE Appendix attached to manual.

6. Apply the information obtained through the interviewing and monitoring process to:

    a. Evaluate current drug therapy.

    b. Anticipate and identify drug therapy problems.

7. Review each patient's therapeutic regimen on a daily basis **before rounds** to ensure understanding of the medications, dosages, routes of administration, efficacy, and potential drug interactions.

8. Provide patient specific drug information (verbally and/or in writing) to nurses, physicians, peers and pharmacy preceptors.

9. Counsel all assigned patients about their drugs.

B. Other Activities

1. Participate in department of pharmacy educational activities or other educational activities as assigned by preceptors.

2. For Community and Hospital Pharmacy rotations, students should refer to CAPE Appendix, Domain II.

3. Written reports/ In-service/DUE/Drug Information Questions

    a. Each student is required to prepare at least one written assignment per rotation that will be requested by the preceptor. Assignments can include any of the following: drug monograph, a review article, drug information question, pharmacy newsletter, DUE, or an in-service to the medical or nursing team. The assignment(s) must be adequately referenced. When asked drug information questions by members of the healthcare team students must check their references thoroughly prior to answering such questions and consult with the supervising faculty.

    b. Often, formal written responses may be required. The prepared answer should restate the question, establish an answer and support the answer with appropriate references. Researching an answer will help students understand the issue and familiarize them with the various available references.

    c. All assignments must be submitted to the preceptor on due date. Any delays will cause a 5% deduction from the total assignment grade.

4. Interventions

    a. Students must document their interventions on the intervention sheets provided.

    b. Students need to note the patient's case # and initials for further inquiries.

    c. Interventions should be submitted to preceptors regularly and be part of students' daily activities.

5. Presentations

    a. Formal Oral Presentations**:** For each required rotation, students should present one formal oral presentation on a topic assigned by the preceptor unless otherwise specified. Preceptors will assign presentation date The presentation duration is in 30-35 minutes. Audiovisual (AV) has to be used appropriately. Students should be prepared at least 2 days before presentation

date (AV, slides, handouts). All presentation should be accompanied with a comprehensive handout.

b. Journal Club: For each elective rotation, students must present a journal club on a recent primary literature publication assigned by the preceptor or chosen by the student upon preceptor request. Preceptor will assign date of the Journal Club. Student should present in 25 - 30 minutes the relevance of this paper in current practice. It is the student's duty to make copies available to fellow students/preceptors 2 days to the Journal Club.

Section V: Description of Requirements and Grading

A. PHA 670: Ambulatory Care – Required Rotation in the U.S.

Students must follow the drug therapy and progress of at **least one patient per day using the SOAP format.** Students must monitor the drug therapy and progress of at least two patients per day. Patients may be selected by the students or assigned by the preceptor.

Professionalism	10%
Clinical Skills	40%
Knowledge	30%
Communication	20%
	100%

Please review the corresponding evaluation form for more details on the grading of the individual expected competencies

B. PHA 671: Community Pharmacy – Required Rotation in the U.S.

Students are required to participate in daily operation of pharmacy and provide direct care to patients under the direct supervision of the preceptor. Students must monitor and follow up patients on service or as instructed by the preceptor. Students must counsel at least two patients per day about drug therapy management and other related diseases information, under the direct supervision of adjunct faculty**.** A workbook of activities must be fulfilled by the end of rotation to document the completion of the learning outcomes detailed in the syllabus of this rotation.

Professionalism	10 %
Clinical Skills	20%
Knowledge	10%
Communication	50%
	100%

Please review the corresponding evaluation form for more details on the grading of the individual expected competencies

C. PHA 672: Hospital or Health-System Pharmacy – Required Rotation in the U.S.

Students must engage with various pharmacy personnel to learn all aspects of institutional pharmacy practice.

Students must prepare a medication use evaluation, submit a drug monograph, research at least four drug information questions (one/week), and prepare a medication safety report on a topic assigned by the preceptor.
The oral presentation must address a Health-System related topic assigned by the preceptor.

Professionalism	10 %
Clinical Skills	50%
Knowledge	20%
Communication	20%
	100%

Please review the corresponding evaluation forms for more details on the grading of the individual expected competencies

D. PHA 673: Inpatient/Acute Care General Medicine – Required Rotation in the U.S.

Students must follow the drug therapy and progress of at least three patients per week using the SOAP format. Students must monitor and follow up patients and their treatments on service or as instructed by the preceptor (with a minimum of 7 active patients monitored per day). Patients may be selected by the students or assigned by the preceptor. In the Critical Care settings, students must follow the drug therapy and progress of two patients per week using the SOAP format.

Professionalism	10%
Clinical Skills	50%
Knowledge	30%
Communication	10%
	100%

Note: Extra assignments will be counted as part of the case discussion grade

Please review the corresponding evaluation forms for more details on the grading of the individual expected competencies

E. PHA 650: Inpatient/Acute Care – Elective Rotations in Lebanon

Students must follow the drug therapy and progress of at least three patients per week using the SOAP format. Students must monitor and follow up patients and their treatments on assigned service or as instructed by the preceptor (with a minimum of 7 active patients monitored per day). Patients may be selected by the students or assigned by the preceptor. In the Critical Care settings, students must follow the drug therapy and progress of two patients per week using the SOAP format.

Pharmacy rounds		65%
Patient Cases	(45%)	
Service patient F/U	(20%)	
Communication		25%
Professionalism		10%
		100%

Note: Extra assignments will be counted as part of the case discussion grade

For other non-direct patient care APPEs (regulatory affairs, industrial pharmacy, academic teaching, health outcomes research), please refer to the individual rotation syllabi.

Section VI: Evaluation Procedure

1. For each rotation, the preceptor selects all assignments, evaluates student performance and assigns rotation grades.
2. At the end of the 2nd week of rotation, the preceptor will submit a midpoint student evaluation.
3. At the end of the 4th week of rotation, the preceptor will submit a final student evaluation.
4. Feedback and evaluations must be provided to students in privacy without the presence of the students, healthcare professionals, or guests.
5. At the end of each rotation, the student will fill an electronic evaluation form to provide **constructive** feedback to the preceptor and site about the clerkship experience. The feedback form must be completed BEFORE accessing (online) final grades. The information provided in the student feedback form will be distributed to preceptors and site coordinators at the conclusion of the clerkship year.
6. Students are required to submit a self-evaluation at the beginning of the academic year, a midpoint self-evaluation at the end of the fall semester, and a final self-evaluation at the end of the academic year.
7. In each APPE, student self-assessment and preceptor assessment of student's performance must be completed online on TK20 Learning Management System per assigned deadline. The student completes a baseline self-assessment during the first few days of each rotation, a midpoint and a final self-assessment. The preceptor completes a midpoint and a final assessment.

Section VII: Grading Scale

The LAU Grading Scale is followed for all required and elective APPEs.

Grade	Quality Points	Guidelines over 100
A	4	≥ 90
A-	3.67	87-89
B+	3.33	83-86
B	3.0	80-82
B-	2.67	77-79
C+	2.33	73-76
C	2	70-72
C-	1.67	67-69
D+	1.33	63-66
D	1	60-62
F	0	≤ 59

Section VIII: Criteria for Student Progression through Advanced Pharmacy Practice Experiences. Recommendation of the Experiential Education Subcommittee

1. Passing grade for all elective and required Advanced Pharmacy Practice Experience (APPE) is C.
2. P4 student may fail only one elective or required APPE. Should a student fail more than one APPE (elective or required), he/she will be dismissed from the PharmD program.
3. P4 student should repeat the failed APPE only once to be eligible for graduation.
   - If a student fails a required APPE, he/she will have to repeat that same required APPE, with a different preceptor when feasible.
     - Failed required APPE must be repeated during the grace period month in the U.S. prior to returning to Lebanon over a condensed 3-week duration equivalent to 50 hours/week (150 hours in total).
   - If a student fails an elective APPE, he/she will have to repeat that same APPE with the same or different preceptor when feasible, or repeat a different elective
     - Failed elective APPE must be repeated during the last available month of the academic year in Lebanon over a 3-week duration condensed equivalent to 50 hours/week (150 hours in total)
4. If a student fails a repeated APPE, he/she will be dismissed from the PharmD program.
5. A student can spend a maximum of one calendar year to complete the PharmD APPEs unless interrupted by a force majeure (i.e. health-related conditions, visa delay). In such case, extension for up to one additional calendar year may be considered and will be addressed on a case-by-case basis by filing a petition to the School's Student Affairs Office.

   Disclaimer: For required APPEs, all is contingent on allowances by U.S. immigration, if the visa extension is allowed from original interval.

Section IX: Plagiarism

Plagiarism on assignments and project work is a *serious offense*. SOP will address any case of detected plagiarism based on the LAU Student Code of Conduct available at the following link: https://www.lau.edu.lb/about/policies/student_code_of_conduct.pdf

Section X: Dealing with Problems or Dispute

A. Dispute with Preceptors

If a problem or dispute arises in connection with preceptor actions in a rotation, students should take the following actions in the following order:
1. Contact your direct preceptor and attempt to resolve the issue directly.
2. If your complaint is not resolved, contact the APPE Coordinator in Lebanon or in the U.S.
3. If your complaint is not resolved, contact the Director of Experiential Education.

4. If your complaint is still not resolved, you may contact the Chairperson of the Pharmacy Practice Department.
5. If your complaint is still not resolved, you may contact the Assistant Dean for Student Affairs
6. If your complaint is still not resolved, you may contact the Dean of the College of Pharmacy.
7. If your complaint is still not resolved, you may grieve to the School Grievance Council.

B. Dispute with Hospital Staff/Student

If a problem or dispute arises in connection with any of the hospital staff or students, contact your direct preceptor as soon as possible.

Section XI: Other Issues

A. Contacting Preceptors

Students must discuss with the preceptor the best method of contact (pagers, emails, mobile phones, text messages, and extensions…). It is important not to share the preceptor contact info with the public without permission.

B. Use of Mobile Phones

During meetings with preceptors, rounds, conferences, and other educational activities, use of mobile phones is prohibited. In the event, where the student on round requires immediate access to a patient database or a pharmacy related reference, the student is expected to request permission from his/her preceptor to use the mobile phone.

Section XII: Preceptors of the Advanced Pharmacy Practice Experiences

A. Preceptors for the Elective APPEs in Lebanon

Carl Aoun, Pharm.D.

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Wissam Kabbara, Pharm.D., BCPS (AQ Infectious Diseases)

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Hanine Mansour, Pharm.D., BCPS (AQ Infectious Diseases), BCIDP

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Soumana Nasser, Pharm.D., M.S. (Health Economics and Pharmacoeconomics)

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Preceptors at Benta SAL, Lebanon

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Pascale Fares, Pharm.D.
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Rafka Yazbek, M.S. Molecular Chemistry
Mirna Zougheib, B.S. Biochemistry

Preceptor at CCHO (Centre of Clinical, Health Economics, and Outcome Research) SAL, Lebanon

Racha Sabbagh Dit Hawasli, Pharm.D., Ph.D. Qualitative and Quantitative Research Methodologies and Pharmacoeconomic Modelling

Preceptors at Dispensaire Saint Antoine, Lebanon

Lama Abi Khalil, M.D., Ph.D. Family Medicine/ DU, Gerontology
Elie Karam, B.S. Pharm

Preceptor at Makhzoumi Foundation, Lebanon

Maya Al Ariss, Pharm.D.

Site Coordinator

B. Preceptors for the Required APPEs in the United States

1. Houston Methodist Hospital, Houston, TX

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Appendix A. Domains of Pre-Advanced Pharmacy Practice Experiences within the Doctor of Pharmacy Curriculum[1]

The material described below was extracted from the 2010 American Association of Colleges of Pharmacy document *Pre-APPE Performance Domains and Abilities* that described the domains and abilities central to the preparation of students prior to their entry into Advanced Pharmacy Practice Experience (APPE). Colleges and schools are encouraged to provide evidence of student achievement of these elements to ensure student readiness to enter APPE. Programs are also encouraged to incorporate elements of the Pharmacists' Patient Care Process when constructing their courses and experiences.

Appendix A is organized around critical domains and ability performance statements that are based on the educational outcomes articulated within Standards 1-4. Each domain has one or more suggested ability statement(s) (knowledge, skill, attitudes, values, or behavior). The Key Elements within the Standards that are related to these ability statements are noted in parentheses. Each domain also has suggested example competencies 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 faculty members 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 in determining their own student performance objectives for each of the core domains.

The performance assessments should be compatible with a college/school's 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 Experience (IPPE), colleges/schools will have multiple learning approaches in addition to IPPE to achieve learning of and documentation of student performance of the domain abilities. These approaches may include, but are not limited to, simulations, Objective Structured Clinical Evaluation (OSCE), 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.

Core Domains

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. (Key Element 2.2)

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[1] Accreditation Council for Pharmacy Education. Guidance for the accreditation standards and key elements for the professional program in pharmacy leading to the doctor of pharmacy degree (guidance for standards 2016). Accessed August 20, 2022. https://www.acpe-accredit.org/pdf/GuidanceforStandards2016FINAL.pdf

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 with the law
- Determine appropriate storage of compounded medications before and after dispensing

Basic Patient Assessment

Ability Statement:

Collect, record, and assess subjective and objective patient data to define health and medication-related problems. Patient information is collected in a manner demonstrating knowledge of patient educational level, the unique cultural and socioeconomic situations of patients, and compliance with requirements for patient privacy. (2.1, 2.3)

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 at minimum include drug allergies and reactions, drugs (prescription, non-prescription, 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 (including drug allergies, description of al-

lergic 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 patient instructions, duplicate medications, and clinically relevant drug interactions
- Identify and prioritize a patient's drug-related problems

Medication Information

Ability Statement:

Demonstrate knowledge—and accept responsibility for that knowledge—of commonly used medications, formulations, and drug products. (1.1, 12.1)

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 (e.g., Top 200) medications and other drugs routinely used in specific patient populations
- Describe the mechanism of action of common medications (e.g., Top 200 medications) and other drugs routinely used in specific patient populations 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
- Identify appropriate medication information sources for professional and patient use

Identification, Assessment, and Resolution 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. (2.1, 2.3, 2.4)

EXAMPLE Performance competencies:

- Evaluate 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

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. (1.1, 2.2)

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
- Apply mathematics to pharmacokinetics in drug therapy regimen design and patient assessment.

Ethical, Professional, and Legal Behavior

Ability Statement:

In all healthcare 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. (1.1, 2.2, 4.4)

EXAMPLE Performance competencies:

- 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 healthcare 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
- 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

General Communication Abilities

Ability Statement:

Demonstrate effective communication in interactions with patients, their families and caregivers, and other healthcare providers. Communication should be consistent with education level, cultural issues, and be empathetic. Elicit feedback validating understanding of communication. These skills are essential in carrying out the Pharmacists' Patient Care Process. (3.6, 4.1)

EXAMPLE Performance competencies:

- Communicate effectively (using verbal, non-verbal, and written communication as appropriate) with patients, caregivers, and other healthcare 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, healthcare providers, and the general public

Patient Education

Ability Statement:

Provide effective health and medication information to patients and/or caregivers and confirm patient and/or caregiver understanding of the information being provided. (3.2, 3.5, 3.6, 4.4)

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 healthcare 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, whether prescription and self-care
- Demonstrate and/or describe proper administration technique for various drug delivery systems (e.g., inhalers, eye drops)

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. (2.1)

EXAMPLE Performance competencies:
- Collect accurate and comprehensive drug information from appropriate sources to make informed, evidence-based, patient-specific, or population-based decisions
- 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 health 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

Health and Wellness – Public Health

Ability Statement:

Know and apply principles of health and wellness when providing individual and population- based health and wellness information. Integrate unique characteristics of individuals and populations in design of health and wellness information. (2.3, 2.4)

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), 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

Insurance/Prescription Drug Coverage

Ability Statement:

Utilizing knowledge of a wide array of private and public health insurance options, assist patients and caregivers to obtain their medications and related para-pharmaceuticals in an affordable manner that meets their healthcare needs. (2.2)

EXAMPLE Performance competency:

- Assist a patient or caregiver in problems related to prescription medication coverage, health insurance, or government healthcare programs

Appendix B. Entry-Level Competencies Needed for Community and Ambulatory Care Pharmacy Practice[2]

A pharmacist practicing in community and ambulatory care practice settings needs to possess competencies in the areas including pharmacist-delivered patient care (i.e. medication therapy management), public health, communication, dispensing systems management, business management, pharmacy law, and leadership. **Example performance competencies include:**

Pharmacist-Delivered Patient Care
- Demonstrate and routinely apply strong clinical skills and provide direct patient care services
- Medication Therapy Management (MTM)
- Define and appropriately document comprehensive MTM services
- Conduct a patient interview and provide education
- Conduct comprehensive medication review
- Identify and resolve medication therapy problems, manage drug interactions, and resolve gaps in care
- Recommend therapeutic alternatives and generic substitutions
- Document services and follow up with other health professionals
- Use multiple MTM platforms as required by third-party payers
- Support and assist patient behavior change
- Proactively identify and resolve patient-specific barriers to medication adherence
- Complete physical assessments and make appropriate recommendations or referrals
- Describe personalized medicine and apply an individual patient's genetic profile to the selection and modification of a medication regimen
- Demonstrate knowledge of specialty pharmaceuticals, and support patient adherence and administration of this growing category of medications
- Describe and apply clinical practice guidelines to patient care
- Facilitate patient self-administration of medications and disease monitoring
- Demonstrate knowledge of appropriate administration technique for dosage forms commonly dispensed in community pharmacy
- Proactively assess and resolve issues related to medication safety
- Describe common doses of drugs requiring monitoring and collaborative drug therapy management
- Proactively perform counseling and medication education which complies with OBRA-90

Public Health

Clinical Application of Public Health Policy:

- Discuss the pharmacist's role in education and intervention in public health initiatives applicable to pharmacy practice
- Collect, interpret, and make recommendations based on the results of health and wellness screenings and diagnostic tests
- Describe the need for Clinical Laboratory Improvement Amendments (CLIA) waiver and describe documentation of testing done in the community pharmacy

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[2] From: *Entry-Level Competencies Needed for Community Pharmacy Practice* conducted by NACDS Foundation-NCPA-ACPE Task Force, 2013

- Proactively assist with patient self-care, including helping patients make appropriate selections of over-the-counter medications and dietary supplements
- Proactively promote healthy lifestyle and nutrition and describe how it impacts drug therapy and overall health
- Describe the role of a pharmacist in emergency management
- Identify and explain the major roles of the pharmacist in population-based provision of care (as distinguished from direct patient care)

Immunization:

- Be certified to administer immunizations (preferably early in curriculum to allow for practice and utilization during the professional program)
- Describe the Vaccine Information Statement (VIS), the Vaccine Adverse Events Reporting System (VAERS), and state vaccine registries

Communication Skills

Health Literacy:

- Determine patient level of health literacy by observation or interview, appropriately adjust counseling delivery, and to communicate at all levels of health literacy
- Solve adherence challenges created by low health literacy

Patient communications:

- Support patient behavior change and self-efficacy through skills such as motivational interviewing
- Demonstrate a respect for patient confidentiality and privacy rights
- Demonstrate patient compassion and empathy

Health professional communications:

- Effectively function as part of a team engaged in interprofessional, team-based care
- Document appropriate therapeutic recommendations related to medication therapy in the Electronic Health Record (EHR) or similar platforms

Drug information skills:

- When given a drug information question, access and utilize appropriate drug information resources and provide an accurate and credible solution in both written and oral forms
- Develop a variety of drug-related reports, monographs, reviews, and policies using drug literature evaluation skills
- Evaluate appropriateness of clinical trials and other study designs, including validation of methodology and assessment of data credibility
- Access appropriate drug information resources required for patient education

Medication management team communications:

- Identify and manage conflict at all levels

- Supervise and motivate employees
- Delegate appropriate tasks
- Effectively articulate team objectives and measure and report team performance

Dispensing Systems Management

Extemporaneous Compounding:

- Perform basic, non-sterile compounding

Supply Chain:

- Describe the pharmaceutical supply chain and anticipate, identify, and troubleshoot problems with the supply chain
- Oversee and effectively manage the drug procurement process

Operations:

- Outline typical pharmacy dispensing workflow
- Comprehend and adopt a given set of pharmacy operating procedures
- Comprehend and adopt an existing collaborative drug therapy management agreement
- Evaluate prescription for legitimate medical use, and appropriate dose
- Describe the roles and responsibilities of each pharmacy staff member
- Describe dispensing processes when pharmacy automation is utilized

Quality:

- Describe the concepts of quality measurement and improvement
- Apply national standards, guidelines, and best practices
- Develop a plan for quality and performance improvement

Pharmacy Technology:

- Describe the role of computerized pharmacy management systems in dispensing
- Dispense prescriptions utilizing technology-assisted workflow
- Describe the role of pharmacy robotics, point-of-sale systems and electronic signature capture
- Describe the electronic health record (EHR) and the role and responsibilities of a pharmacist who has access to a certified EHR

Business Management

Lead the operations of a community pharmacy practice site and to:

- Manage inventory costs and inventory levels or order points
- Identify cash flow problems and apply solutions to address
- Develop a sound business plan for clinical service programs

- Describe basic finance terms and analyze a financial statement
- Apply healthcare economics and pharmacoeconomics
- Describe strategies for asset protection and safety

Effectively use pharmacy technology including:

- Automated filling systems
- Prescription processing systems with contemporary features

Understand and communicate managed care/drug-coverage policies and to:

- Explain the purpose/function of a Pharmacy Benefit Management (PBM) program and the general concept of managed care
- Discuss general concepts associated with the benefit structure of a health plan, including co-pay vs. co-insurance, premium vs. deductible and maximum out of pocket costs
- Outline general provisions of Medicare Parts A, B, C and D, and Medicaid, including enrollment and other payment programs
- Provide guidance to patients seeking assistance to apply for drug payment programs
- Troubleshoot denied claims
- Discuss the concept of drug utilization review, formulary management and provide functional definitions of key managed care strategies (e.g., prior authorizations, step therapy, quantity limits)
- Identify major factors that contribute to prescription drug related fraud and abuse
- Identify the major factors influencing drug costs for a managed care organization (e.g., pharmacy costs, drug pricing methodologies, contracts/rebates, discounts)

Leadership Abilities

- Display confidence in the patient care skills learned in pharmacy school
- Demonstrate professional behavior (attitude, dress, appearance, etc.) in practice settings
- Embrace and advocate changes that improve patient care

Legal Considerations

- Understand laws and regulations that impact pharmacy practice
- Understand other state and federal rules and regulations affecting legal operation of a pharmacy.
- Identify issues, pending legislation, and regulations across all levels of government and how to make a positive impact
- Understand professional ethics as they apply to the practice of pharmacy
- Apply knowledge and understanding of all legal and ethical aspects of pharmacy practice required to evaluate a patient care decision

Appendix C. Entry-level Competencies Needed for Hospitals/Health Systems Practice[3]

A pharmacist practicing in a hospital/health system pharmacy practice setting needs to possess competencies in areas including pharmacy systems, medication safety and quality, clinical applications, and professional practice. **Example performance competencies include:**

Hospital/Health Pharmacy Systems

- Describe the medication use process in health systems, including how pharmacy impacts the safety of storage, prescribing, transcription, dispensing, administration and monitoring steps
- Describe the basic drug procurement process including drug selection, inventory management, backorders, recalls, drug waste, handling of drug shortages, and their relationship to safe, effective patient care
- Describe the integration and interface of clinical and distributive functions, including the synergy that translates into safe and effective medication therapy
- Outline the basic functionality of commonly used automated systems related to medication use (such as automated dispensing cabinets, computerized prescriber order entry systems, bar code medication administration systems, programmable infusion devices, and robotics), understanding their appropriate and safe use as well as unintended consequences
- Perform activities within a typical hospital drug distribution system, including order receipt, evaluation and review, and describe the appropriate roles of pharmacy technicians and pharmacists in these processes
- Demonstrate aseptic technique and describe processes and facilities needed to provide sterile compounded parenteral solutions, including the basic requirements of United States Pharmacopeia (USP) 797.
- Describe the appropriate use of injectable medications, including intravenous, intrathecal, intraocular, intradermal, and other routes. Description should include unique preparation techniques, concentration considerations, rates of administration, special infusion devices, and compatibility considerations
- In real or simulated scenarios, supervise pharmacy technicians in their work in medication preparation and delivery

Medication Safety and Quality

- Summarize current National Patient Safety Goals and articulate those goals that relate to medication use, pharmaceutical care, and pharmacy's role in each
- Describe how organizations such as the Joint Commission strive to ensure quality of healthcare through the accreditation process, giving examples of relevant standards related to safe and appropriate medication use
- Describe those national standards, guidelines, best practices, and established principles and process related to quality and safe medication use (e.g., storage of look- alike/sound-alike medications, high-alert medications, storage of concentrated potassium in patient-care areas,

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[3] *Entry-level Competencies Needed for Pharmacy Practice in Hospitals and Health-Systems* conducted by the ASHP-ACPE Task Force, 2010.

dangerous abbreviations, leading decimal points and trailing zeros, quality measure related to medications, etc.)
- Given a real or simulated case of a patient transitioning from one care setting to another, effectively reconcile his/her medications and make appropriate communications to involved pharmacy providers
- Employ performance improvement techniques used in health systems and describe how they are used to improve the medication use process

Clinical Applications

- Given a drug information question, access appropriate drug information resources, including primary literature, and provide an accurate and credible answer. Present the answer successfully in both written and oral forms
- Given a real or simulated case requiring practical application of pharmacokinetic dosing principles for commonly used drugs that rely on serum levels for dosing, determine the correct dose
- Make useful contributions to the establishment of medication-use policies, criteria, and maintenance of the formulary as a student member of the Pharmacy and Therapeutics Committee using an evidence-based approach to evaluation of the literature

Professional Practice

- Demonstrate effective verbal and written communications to staff, patients, and healthcare team members
- Demonstrate professional behavior (attitude, dress, appearance, etc.) in practice settings
- Given a real or simulated case, document appropriate therapeutic recommendations related to medication therapy
- Accurately triage multiple patient-care priorities in times of high activity and workload
- Given a real or simulated case, respond to questions with the appropriate level of detail necessary to ensure proper patient care and communication with other relevant parties
- Given a real or simulated pharmacy-related problem, demonstrate effective problem- solving skills
- Given a real or simulated case, demonstrate an appropriate level of clinical knowledge related to medications and therapeutics in making decisions or recommendations.]
- Analyze a recently published study
- Describe the impact of pharmacist involvement on medication safety and quality using appropriate literature
- Evaluate medication-use patterns in a specified patient population

Appendix D. Entry-level Competencies Needed for Managed Care Pharmacy[4]

In order to practice effectively in a managed care environment, graduates need a solid understanding of the principles of healthcare economics, population health, evidence-based medicine and evidence-based use of medications, quality measurement, supply-chain management, and drug-benefit management. **Example performance competencies include:**

Cognitive domain
- Explain the general concept of managed care
- Describe the differences between healthcare delivery models, including preferred provider organizations (PPOs), accountable care organizations (ACOs), integrated systems, and patient-centered medical homes
- Define pharmacoeconomics and explain practical applications
- Outline the general provisions of Medicare Parts A, B, C, and D, and Medicaid, including coverage of medications
- Define formulary systems and explain the rationale for and practical applications of a formulary system
- Describe the steps involved in developing a formulary system
- Discuss the concept of utilization management and provide functional definitions of key elements associated with drug-related utilization management (such as prior authorization, step therapy, and quantity limits)
- Discuss general concepts associated with the benefit structure of a health plan, including co-pay vs. co-insurance, premium vs. deductible, and maximum out-of-pocket costs
- Identify the major factors influencing drug costs for a managed care organization (e.g., pharmacy costs, drug-pricing methodologies, contracts/rebates, discounts)
- Identify and explain the steps involved in the drug-approval process in the U.S.
- Explain the purpose and function of pharmacy benefit management programs
- Discuss the principles of patient-centered care management programs
- Discuss the principles of quality management
- Explain the role of quality organizations in ensuring quality in the managed care setting
- Identify and explain the major roles of the pharmacist in population-based provision of care (as distinguished from direct patient care)
- Explain the term "specialty pharmaceuticals," give examples of such products, and describe generally how they are procured, stored, and dispensed to patients
- Identify several major factors that contribute to drug-related fraud and abuse
- Identify several major factors that contribute to drug waste
- Discuss the requirements for patient confidentiality as provided for under the 1996 Health Insurance Portability and Accountability Act (HIPAA) and professional practice guidelines

Psychomotor domain
- Demonstrate strong clinical skills
- Communicate effectively, both orally in writing, in a manner appropriate for the intended audience (e.g., patient, healthcare provider, plan sponsor)
- Apply critical-thinking and problem-solving skills

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[4] *Based on the work of a joint AMCP-ACPE Task Force, 2013.*

- Demonstrate strong computer skills and apply those skills in analyses, presentations, and communications
- Function as a productive team member
- Advocate on behalf of the appropriate use of medications and needs of patients
- Develop a variety of drug-related reports, monographs, reviews, and policies, using drug literature evaluation skills
- Develop educational materials and correspondences for patients and caregivers (at the appropriate level of understanding)
- Conduct literature searches on currently marketed drug products and those in the pipeline
- Evaluate appropriateness of clinical trials of medications, including validation of trial design and assessment of data credibility
- Create and maintain effective relationships with others, based on an understanding of the needs of key stakeholders
- Demonstrate effective medication therapy management skills
- Apply major clinical practice guidelines in making therapeutic recommendations for individual patients
- Demonstrate expertise in formulating, interpreting, and evaluating clinical medication criteria
- Conduct medication utilization evaluations
- Identify quality/outcome indicators that could be used in evaluating a specific pharmacy service or program
- Evaluate medication-use patterns in a specified patient population

Affective domain – Display the following attributes:

- Respect for employer, colleagues, and patients
- Honesty and integrity
- Appropriate work ethic
- Personal responsibility and accountability
- Professional dress
- Respect for patient confidentiality and privacy
- Honoring promises (keeping commitments)
- Punctuality

Appendix E. Documents for Programmatic Development

Appendix E contains links to several documents that provide guidance in programmatic development.

Center for the Advancement of Pharmacy Education (CAPE) related topics – three insightful papers from groups with AACP on:

Assessment – Link:

http://www.aacp.org/resources/education/cape/Open%20Access%20Documents/CAPEoutcomes2013.pdf

Curriculum – Link:

http://www.aacp.org/resources/education/cape/Documents/CurriculumSIGCAPEPaperFinalNov 2014.pdf

Leadership – Link:
http://www.aacp.org/resources/education/cape/Documents/SLDCAPEManuscriptFINAL.pdf

Continuing professional development – Guidance on Continuing Professional Development (CPD) for the Profession of Pharmacy – outlines critical issues in this important area along with suggested strategies for pharmacists and programs to consider.

Link: https://www.acpe-accredit.org/pdf/CPDGuidance%20ProfessionPharmacyJan2015.pdf

Also see Guidance on Continuing Professional Development for Professional Degree Programs Link:

https://www.acpe-accredit.org/pdf/CPDGuidanceProfessionalDegreeProgramsJan2015.pdf

Geriatric patient care – American Society of Consultant Pharmacists Curriculum Guide - suggested competencies for Doctor of Pharmacy graduates.

Link: http://www.ascp.com/sites/default/files/2ndEd-ASCP-CurriculumGuide.pdf

Health care transformation – AACP's Task Force on the Impact of Healthcare Transformation on Pharmacy Education - contains a list of competencies for future practitioners providing direct patient care. Link: http://www.aacp.org/governance/councildeans/Documents/COD%20and%20Taskforces%20Final%20Report%20July%202012.pdf

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

PCOA - Pharmacy Curriculum Outcomes Assessment - Technical Report by NABP – description of this assessment tool and relevant information for colleges and schools. Link:

http://www.nabp.net/programs/assessment/pcoa

PPCP – Pharmacists' Patient Care Process – description and relevant information for colleges and schools.

Link: http://www.pharmacist.com/sites/default/files/files/PatientCareProcess.pdf

Quality measures - Pharmacy Quality Assurance's National Quality Strategy – discussion of quality measures that pharmacists and student pharmacists should be aware of.

Link: http://pqaalliance.org/measures/default.asp

Appendix I. Useful Websites

Cardiology	
American College of Cardiology	http://acc.org
American College of Cardiology/American Heart Association	www.accaha.org
American Heart Association	www.americanheart.org
Chest Journal	www.chestjournal.org
European Heart Journal	www.eurheartj.oxfordjournals.org
European Society of Cardiology	www.escardio.org
The Heart	www.theheart.org

Critical Care (ICU)	
Critical Care Medicine	http://journals.lww.com/ccmjournal/pages/default.aspx
Critical Care/ The Clinics	www.criticalcare.theclinics.com
Journal of Critical Care	www.jccjournal.org
Society of Critical Care Medicine	www.sccm.org

Emergency Medicine	
American Academy of Emergency Medicine	www.aaem.org/jem
Annals of Emergency Medicine	www.annemergmed.com
Biomed Central	www.biomedcentral.com/bmcemergmed
Canadian Journal of Emergency Medicine	www.cjem-online.ca
Clinical Pediatric Emergency Medicine	www.journals.elsevierhealth.com/periodicals/ycpem

Endocrinology	
American Academy of Family Physicians	www.aafp.org
American Association of Clinical Endocrinologists	www.aace.com
Clinical Endocrinology	www.wiley.com/bw/journal.asp?ref=0300-0664&site=1
Journal of Diabetes Care	http://care.diabetesjournals.org
Journal of Endocrinology And Metabolism	http://jcem.endojournals.org

Guidelines	
National Guideline Clearinghouse	www. guidelines.gov

Infectious Diseases	
Antimicrobial Agents And Chemotherapy	http://aac.asm.org
Central For Disease Control And Prevention	www.cdc.gov
Infectious Disease Society of America	www.idsociety.org
Infectious Diseases	www.id.theclinics.com
International Society For Infectious Diseases	www.isid.org
The Lancet Infectious Diseases	www.thelancet.com/journals/laninf/issue/current
World Health Organization	www.who.int

Internal Medicine	
Annals of Internal Medicine	www.annals.org
Archives of Internal Medicine	http://archinte.ama-assn.org
British Medical Journal	www.bmj.org

Journal of The American Medical Association	http://jama.ama-assn.org
New England Journal of Medicine	www.nejm.org
The Lancet	www.thelancet.com

Neurology

American Academy of Neurology (AAN) Practice Guidelines	www.aan.com/index.cfm?axon=redirect&&path=/go/practice/guidelines
American Psychiatric Society	www.psych.org/
Annals of Neurology	http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291531-8249
Archives of Neurology	http://archneur.ama-assn.org/
Clinical Neuropharmacology	http://journals.lww.com/clinicalneuropharm/pages/default.aspx
European Federation of Neurological Societies (EFNS) publications	www.efns.org/
Journal of Neurology Neurosurgery and Psychiatry	http://jnnp.bmj.com/
Lancet Neurology	www.thelancet.com/journals/laneu/
Movement Disorder Virtual University	www.mdvu.org/
Movement Disorders	www.movementdisordersjournal.com/
Nature Clinical Practice Neurology	www.nature.com/ncpneuro/
Neurology	www.neurology.org/
World Federation of Neurology publications	www.wfneurology.org/wfnseminars.htm

Nephrology

American Journal of Kidney Disease	www.ajkd.org
American Journal of Nephrology	www.karger.com/ajn
ISN Nephrology Gateway	www.isn-online.org
Journal of Nephrology	www.jnephrol.com
National Kidney Foundation	www.kidney.org
Nephrology at your Fingerprint	www.nephronline.org
Nephrology Dialysis Transplantation	www.ndt.oxfordjournals.org

Nutrition

American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.)	https://www.nutritioncare.org/
American Society for Nutrition (ASN)	https://nutrition.org/
Journal for Parenteral and Enteral Nutrition (JPEN)	http://pen.sagepub.com/
Nutrition in Clinical Practice (NCP)	http://ncp.sagepub.com/
The American Journal of Clinical Nutrition	https://academic.oup.com/ajcn

Obstetrics and Gynecology

Medscape OBGYN & Women's Health	www.medscape.com/womenshealth
Obstetrics & Gynecology	http://journals.lww.com/greenjournal/pages/default.aspx
Obstetrics and Gynecology	www.obgyn.net
Educational tutorials	www.obgyn.net/educational-tutorials/educational-tutorials.asp?page=obstetrics-perinatology

Oncology

American Society of Clinical Oncology	www.asco.org
Cancer Network	www.cancernetwork.com

Hematology Oncology Pharmacy Association	www.hoparx.org
HemOncToday	www.hemonctoday.com
International Society of Oncology Pharmacy Practitioners	www.isopp.org
Journal Of Clinical Oncology	http://jco.ascopubs.org
Multinational Association Of Supportive Care In Cancer	www.mascc.org
National Cancer Institute	www.cancer.gov
National Comprehensive Cancer Network	www.nccn.org
Nuclear Control Institute	www.nci.org
The American Society of Hematology	www.hematology.org
The Oncologist	http://theoncologist.alphamedpress.org

Pediatrics

American Academy of Pediatrics	www.aap.org
European Journal of Pediatrics	www.springerlink.com/content/100415
Journal of Paediatric and Child Health	www.wiley.com/bw/journal.asp?ref=1034-4810
Journal of Pediatrics	www.jpeds.com
Journal of the American Academy of Pediatrics	http://pediatrics.aappublications.org/
Pediatric Infectious Disease Journal	http://journals.lww.com/pidj/pages/default.aspx
Pediatrics Critical Care Medicine	www.pedsccm.org
Pediatrics In Review	http://pedsinreview.aappublications.org
WHO Child Health	www.who.int/topics/child_health/en

Pharmacy Journals

ACCP Pharmacotherapy Journal	www.pharmacotherapy.org
American Journal of Health-System Pharmacists	www.ajhp.org
Annals of Pharmacotherapy	www.theannals.com
Drugs	http://adisonline.com/drugs/pages/default.aspx

Search Databases

MdConsult	www.mdconsult.com
Medscape	www.medscape.com
Pubmed	www.pubmed.com