

PRE-APPE Curriculum

The Pre-APPE curriculum, in the P1, P2, and P3 years, is structured to assure that science provides the basis for understanding the development and use of medications and other therapies. The curriculum integrates the biomedical, pharmaceutical, behavioral, social, and administrative sciences with pharmacy practice and professional experience. Course content is highly integrated horizontally within each year and vertically across years. In the first three years of the curriculum, time is allotted each week for practicum or laboratory sessions and experiential learning to help students develop skills necessary for the practice of pharmacy. Practicum sessions are allotted to specific courses in the first and second years, and coordination of topics across courses often occurs. In the third year, integrated practica sessions are shared by multiple courses, providing opportunities for more complex cases related to multiple therapeutic modules. The in-class and experiential learning elements of the curriculum supplement each other and progressively prepare students for practice in a variety of settings.

In the P1 year, students begin applying the principles of patient care by using interviewing skills and acting as their own first “patient,” which allows them to see the profession through the eyes of a patient. Students learn the principles and theory of patient care and apply the skills to a series of cases, then to standardized patients, and finally to actual patients in the community. The courses of the P1 year provide students with a foundation in the pharmaceutical sciences and practice. The School’s longstanding experiential program in the P1 year, embedded in Community Health (CH) 1 and 2, introduces basic pharmacy practice skills and development of an understanding and sense of professional responsibility to meet the fundamental health care needs of diverse populations.

The P2 curriculum builds on the foundation as students apply their patient care skills to more complex cases in the therapeutic modules and with human patient simulators. These exercises incorporate foundational knowledge and critical thinking provided by the science courses. Patient care skills are further developed in the community pharmacy and ambulatory care interprofessional clinic setting as students learn and apply the principles of medication therapy management. The P2 year courses expand on the science and practice foundations of the first year. The focus of the P2 IPPEs, embedded in Community Pharmacist Practice (CPP) 1 and 2, is on the steps to implement direct patient care practices in the community. Students practice patient interviewing skills and patient care documentation regarding patient assessment and therapy recommendations. Students connect with local community pharmacies to learn alongside pharmacist preceptors while completing patient care focused assignments and community outreach projects. Reflections and small group discussions allow students to consolidate and synthesize their learning.

In the P3 curriculum, case analysis increases in complexity with cases that include multiple drug-related problems and incorporate the foundational science principles with complex drug therapies and drug interactions. Computer-assisted learning cases and self-directed learning strategies introduced in the P2 year allow students to develop their clinical decision-making skills, which are then applied to patients in the institutional and other clinical settings through experiential learning. The P3 year further integrates science and practice in organ-based therapeutic modules such as immunology and endocrinology. Experiential learning in the P3 year, embedded in Health System Pharmacy 1 and 2, focuses on practice in institutional/health-system settings. Students have the opportunity to learn principles of institutional medication management, participate in direct patient care and other specialized areas of health-system practice in a variety of settings.

DEFINITION OF P4 ADVANCED PHARMACY PRACTICE ROTATIONS

Acute Care Rotation: *(Inpatient clinical pharmacy practice)*

During this rotation students will develop their pharmaceutical care skills for patients who are in an institution (e.g., hospital). Patients are acutely ill and often require complex and/or urgent medical attention. Patient care skills to be developed encompass the Pharmacist Patient Care Process and include:

- Proper use of patient-specific comprehensive data (patient/caregiver interviews, past medical records, medication history, physical exam findings, diagnostic and laboratory data) for making drug therapy decisions that reflect pharmaceutical care.
- Developing safe and cost-effective patient-specific pharmaceutical care plans with specific goals to resolve or prevent drug-related problems. These plans should be developed using previously gathered data and knowledge of pharmacokinetics, pharmacodynamics, social, cultural, ethical and humanistic factors.
- Proper implementation of patient-specific pharmaceutical care plans through written and oral communication. Plans should be communicated so that patients as well as other health care providers can understand their scope, nature and importance. Plans should inform all those involved of the risks and benefits of therapy, as well as clearly outline the proper use and desired outcome.
- Clearly document, using appropriate style and language, pharmaceutical care plans and patient care activities in the medical chart.
- Monitoring of patient-specific pharmaceutical care plans through collection and interpretation of pertinent data. All care plans should be assessed to see if previously defined goals have been achieved. In assuming the responsibility for outcomes it may be necessary at times to reevaluate treatment plans or therapeutic goals.
- Communication and medication therapy evaluation and intervention may occur with prescribers, nurses, patients, or patient families, and/or via communication within the electronic health record.

Ambulatory Care Rotation: *(Outpatient clinical pharmacy practice)*

During this rotation students will develop their pharmaceutical care skills for patients who are ambulatory (e.g., in a clinic or a pharmacy care center). Patients are ambulatory, with chronic disease management needs, such as outpatient follow-up for adherence, proper medication dosing, and/or monitoring of medication safety and effects. Patient care skills to be developed encompass the Pharmacist Patient Care Process and include:

- Proper use of patient-specific comprehensive data (patient/caregiver interviews, past medical records, medication history, physical exam findings, diagnostic and laboratory data) for making drug therapy decisions that reflect pharmaceutical care.
- Developing safe and cost-effective patient-specific pharmaceutical care plans with specific goals to resolve or prevent drug-related problems. These plans should be developed using previously gathered data and knowledge of pharmacokinetics, pharmacodynamics, social, cultural, ethical and humanistic factors.
- Proper implementation of patient-specific pharmaceutical care plans through written and oral communication. Plans should be communicated so that patients as well as other health care providers can

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- Clearly document, using appropriate style and language, pharmaceutical care plans and patient care activities in the medical chart.
- Monitoring of patient-specific pharmaceutical care plans through collection and interpretation of pertinent data. All care plans should be assessed to see if previously defined goals have been achieved. In assuming the responsibility for outcomes it may be necessary at times to reevaluate treatment plans or therapeutic goals.
- Understanding use of available medication assistance programs to help ensure patients' access to medications
- Communication and medication therapy evaluation and intervention may occur with prescribers, nurses, patients, or patient families, in-person, telephonically, and/or via communication within the electronic health record.

Institutional (Hospital) Pharmacy Practice Rotation: *(General hospital pharmacy practice)*

During this rotation students will develop competence in understanding and actively participating in the workflow of hospital pharmacy operations. Experiences may include but are not limited to:

- Maintaining and controlling medication inventory
- Understanding medication distribution and documentation systems, including automation and robotics
- Use of the electronic health record
- Use of the Pharmacist Patient Care Process for medication therapy prescribing and order verification for safety of medication selection, dosing, route, and monitoring for effect
- Preparation of intravenous medications including total parenteral nutrition and chemotherapy
- Clinical pharmacy services provided (i.e., pharmacokinetic services, anticoagulation services, antibiotic stewardship programs)
- Medication formulary management
- Providing drug information and education to patients
- Communication with other members of the healthcare team (e.g. nurses, physicians) and/or with patients
- Understanding hospital-based protocols for clinical programs such as pharmacokinetics, therapeutic interchange, IV-to-oral switch, renal dosing
- Pharmacy department management and workflow
- Quality improvement/assurance initiatives

Community Pharmacy Practice Rotation: *(General community pharmacy practice)*

During this rotation students will develop competence in understanding and actively participating in community pharmacy operations. Experiences may include but are not limited to:

- Evaluating and preparing prescriptions for dispensing to patients
- Providing drug information and education to patients
- Provide initial and ongoing evaluation of drug therapy
- Communicate with patients about non-prescription products, devices, and diagnostics
- Understanding health insurance navigation and health plan requirements
- Completing Medication Therapy Management (MTM) services such as Comprehensive Medication Reviews (CMRs) and Targeted Medication Reviews (TMR)
- Advanced drug compounding
- Maintaining and controlling medication inventory

- Understanding distribution and documentation systems, and health record/patient profile access
- Understanding use of available medication assistance programs to help ensure patients' access to medications
- Developing competent pharmacy management skills
- Manage and supervise pharmacy personnel

Elective Rotation: *(Unique, alternative, and specialty pharmacy practice)*

During this rotation students may explore unique and alternative pharmacy practices. Less time may be spent on direct patient care in these settings. Students may also use Acute Care, Ambulatory Care, Community, or Institutional/Hospital sites as their electives. Examples of electives may include:

- Pharmacy Benefits Management and/or Managed Care
- Research
- Pharmacy Administration
- Pharmaceutical Industry
- Home Infusion
- Nursing Home Consulting
- Long-Term Care
- Compounding
- Specialty Practice (diabetes management, behavioral health)
- International experiences