



REQUIRED COMPETENCY AREAS, GOALS, AND OBJECTIVES FOR EMERGENCY MEDICINE POSTGRADUATE YEAR TWO (PGY2) PHARMACY RESIDENCIES

Introduction

The competency areas, goals, and objectives are to be used in conjunction with the *ASHP Accreditation Standard for Postgraduate Year Two (PGY2) Pharmacy Residency Programs*. The first six competency areas described herein are required, and the others are elective.

The required competency areas and all of the goals and objectives they encompass must be included in all programs. Programs may add one or more required additional competency areas from the elective competency area choices to meet program-specific needs. Programs selecting an additional competency area are not required to include all of the goals and objectives in that competency area. In addition to the potential additional competency areas described in this document, programs are free to create their own unique competency areas with associated goals and objectives based on the specific needs of their program. Each of the objectives associated with the goals encompassed by the program's selected program competency areas (required and additional) must be taught and evaluated at least once during the residency year. Elective competency area(s) may also be selected for specific residents when creating their residency development plan.

Each of the objectives listed in this document has been classified according to educational taxonomy (cognitive, affective, or psychomotor) and level of learning. An explanation of the taxonomies is available elsewhere.¹

Competency areas for PGY1 residencies are available on the ASHP website. PGY2 competency areas, goals, and objectives in emergency medicine pharmacy are differentiated from those from PGY1 by specialization and the expectation of PGY2 residents for greater work competence and proficiency.

Definitions

Competency Areas: Categories of the residency graduates' capabilities.

Competency areas are classified into one of three categories:

Required: Six competency areas are required (all programs must include them and all their associated goals and objectives).

¹ Anderson, L. W. and Krathwohl, D. R., et al (Eds.) (2001) *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Allyn & Bacon. Boston, MA (Pearson Education Group).

Additional (for program): Competency area(s) that residency programs may choose to use (in addition to the four required areas) to meet program-specific program needs. Additional competency areas also include those developed by individual programs.

Elective (for specific residents): Competency area(s) or specific goals and objectives within the competency area(s) selected optionally for specific resident(s).

Educational Goals (Goal): Broad statement of abilities.

Educational Objectives: Observable, measurable statements describing what residents will be able to do as a result of participating in the residency program.

Criteria: Examples that describe competent performance of educational objectives. Since the criteria are examples, they are not all required but are intended to be used to give feedback to residents on how well they are doing and how they can improve on the skill described in educational objectives while they engage in an activity.

Activities: The Standard requires that learning activities be specified for each educational objective in learning experience descriptions. Activities are what residents will do to learn and practice the skills described in objectives. Activities are the answer to the question, “What can residents do in the context of this learning experience that will provide the kind of experiences necessary to achieve the educational objective?” (compare and contrast activities with criteria by referring to the definition of criteria immediately above). Specified activities should match the Bloom’s Taxonomy learning level stated in parentheses before each objective.

Competency Area R1: Patient Care

(See the appendix for additional specific requirements.)

Goal R1.1: Provide comprehensive medication management to patients following a consistent patient care process.

Objective R1.1.1: (Applying) Interact effectively with health care teams to manage patients' medication therapy.

Criteria:

- Interactions are cooperative, collaborative, communicative, and respectful.
- Demonstrates skills in consensus building, negotiation, and conflict management.
- Demonstrates advocacy for the patient.
- Effectively contributes and communicates pharmacotherapy knowledge and patient care skills as an essential member of the health care team.

Objective R1.1.2: (Applying) Interact effectively with patients, family members, and caregivers.

Criteria:

- Interactions are respectful and collaborative.
- Shows empathy.
- Uses effective (e.g., clear, concise, accurate) communication skills.
- Communicates with family members and caregivers to obtain patient information when patients are unable to provide the information.
- Communicates with patient, family, and caregivers about initiation and changes of patient therapies.
- Empowers patients, family members, and caregivers regarding the patient's well-being and health outcomes.
- Demonstrates cultural competence.
- Demonstrates advocacy for patients, families, and caregivers.
- Maintains accuracy and confidentiality of patients' protected health information.

Objective R1.1.3: (Analyzing) Collect and analyze information to base safe and effective medication therapy.

Criteria:

- Collection/organization methods are efficient and effective.
- Collects relevant information about medication therapy, including:
 - History of present illness.
 - Pre-hospital course of care (e.g., medications given, vital sign trends, information from the scene, onset of illness/exposure/injury).
 - Relevant health data that may include past medical history, physical assessment findings, outside resources such as external medical records or pharmacy data.
 - Social history, including social-behavioral considerations that may impact medication management for the emergency medicine patient and preventative treatment of partners when appropriate.
 - Medication history, including prescription, non-prescription, illicit, recreational, and non-traditional therapies; other dietary supplements; immunizations; and allergies.
 - Patient assessment (e.g. physiologic monitoring, laboratory values, microbiology results, diagnostic imaging, procedural results, and scoring systems [e.g., Injury severity score (ISS), Glasgow Coma Scale (GCS), Richmond Agitation-Sedation Scale (RASS)/Sedation Agitation Scale (SAS), National Institutes of Health Stroke Scale (NIHSS), Emergency Severity Index (ESI), Rule of Nines, Lund and Browder chart]).
 - Pharmacogenomic and pharmacogenetic information, if available.
 - Allergy/Adverse drug reactions information.

- Medication adherence and persistence.
- Patient lifestyle habits, preferences and beliefs, health and functional goals, and socioeconomic factors that affect access to medications and other aspects of care.
- Consults most reliable sources of information available (e.g., electronic, face-to-face).
- Process for data collection, follow-up, and patient tracking is functional for subsequent problem solving and decision-making.
- Displays understanding of limitations of information in the emergency department and health records at the time of initial evaluation.
- Clarifies information with health care team, patient, or patient representative as needed.

Objective R1.1.4: (Analyzing) Analyze and assess information on which to base safe and effective medication therapy.

Criteria:

- Includes accurate assessment of patient's:
 - History of present illness.
 - Health and functional status at baseline.
 - Health data (e.g., vital signs, imaging, laboratory values, microbiology data).
 - Immunization status.
 - Cultural factors.
 - Access to medications.
 - Health literacy.
 - Other aspects of care, as applicable.
- Identifies medication therapy problems, including:
 - Benefit vs. risk factors of treatment options.
 - Medication omissions for present illness, symptoms, concomitant medication administration (e.g., sedation required with paralytics).
 - Lack of indication for medication.
 - Suboptimal medication regimen (e.g., dose, dosage form, route, method, duration of administration, frequency, duration of regimen).
 - Need for medication therapy modifications due to:
 - Suboptimal medication response.
 - Medication toxicity.
 - Adverse drug or device-related events or the potential for such events.
 - Abnormal lab values/imaging/microbiology.
 - Medication prescribed or continued inappropriately for a particular medical condition.
 - Discrepancy between prescribed medications and established care plan for the patient.
 - Therapeutic duplication.
 - Clinically significant drug–drug, drug–disease, drug–nutrient, drug–genotype interaction, drug–laboratory test interaction, or the potential for such interactions.
 - Use of harmful social, recreational, nonprescription, nontraditional, or other medication therapies.
 - Problems arising from the financial impact of medication therapy on the patient.
 - Patient not receiving full benefit of prescribed medication therapy.
 - Patient lacks understanding of medication therapy.
 - Patient not adhering to medication regimen and root cause (e.g., knowledge, recall, motivation, financial, system).
- Prioritizes patient's health care needs.
 - Triage based on severity of illness.
 - Manage multiple patients simultaneously.
 - Triage based on throughput as appropriate.
 - Delegate to other pharmacists as appropriate.

Objective R1.1.5: (Creating) Design, or redesign, safe and effective patient-centered therapeutic regimens and monitoring plans (care plans).

Criteria:

- Specify evidence-based, measurable, achievable therapeutic goals that include consideration of:
 - The patient’s disease state(s).
 - Best evidence, including clinical guidelines and the most recent literature.
 - Effective interpretation of new literature for application to patient care.
 - Medication-specific information.
 - The goals of other interprofessional team members.
 - Relevant patient-specific information, including culture and preferences.
 - Ethical issues involved in the patient’s care.
 - Quality-of-life issues specific to the patient.
 - End of life issues, when needed.
 - Integration of all the above factors influencing the goals of care.
- Designs/redesigns regimens that are appropriate for the disease state(s) being treated.
 - Reflect:
 - Clinical experience.
 - Evidence-based medicine.
 - Therapeutic goals established for the patient.
 - Patient’s and caregiver’s specific needs.
 - Consideration of:
 - Patient-specific factors, including physical, mental, emotional, patient preferences, culture, or language differences, and financial factors that might impact adherence to the regimen.
 - Any pertinent pharmacogenomic or pharmacogenetic factors.
 - Pharmacoeconomic components (patient, medical, and systems resources).
 - Pertinent ethical issues.
 - Drug shortages.
 - Adhere to the health system’s medication-use policies.
 - Follow applicable ethical standards.
 - Address wellness promotion and lifestyle modification (e.g., appropriate hand hygiene and antibiotic adherence in *Clostridium difficile* positive patients, safe sex practices for patients diagnosed with sexually transmitted infections).
 - Support the organization’s formulary or patient’s insurance formulary.
 - Address medication-related problems and optimize medication therapy.
- Designs/redesigns monitoring plans that:
 - Effectively evaluate achievement of therapeutic goals.
 - Ensure adequate, appropriate, and timely follow-up.
 - Establish parameters that are appropriate measures of therapeutic goal achievement.
 - Reflect consideration of best evidence.
 - Have appropriate value ranges selected for the patient.
 - Have parameters that measure efficacy.
 - Have parameters that measure potential and actual adverse drug events.
 - Have parameters that are cost-effective.
 - Reflects consideration of compliance.
 - Anticipates future drug-related problems.
 - When applicable, reflects preferences and needs of the patient.

Objective R1.1.6: (Applying) Ensure implementation of therapeutic regimens and monitoring plans (care plans) for patients by taking appropriate follow-up actions.

Criteria:

- Effectively recommends or communicates patients’ regimens and associated monitoring plans to relevant members of the interdisciplinary health care team.
- Poses appropriate questions as needed.

- Recommendation is persuasive.
- Presentation of recommendation accords patient's right to refuse treatment.
- If patient refuses treatment, resident exhibits responsible professional behavior.
- If the health care team refuses the resident's recommendation, exhibits responsible professional behavior.
- Creates an atmosphere of collaboration.
- Skillfully defuses negative reactions.
- Communication conveys expertise.
- Communication is assertive but not aggressive.
- Where the patient has been directly involved in the design of the plans, communication reflects previous collaboration appropriately.
- Ensures recommended plan is implemented effectively for the patient, including ensuring that the:
 - Plan represents the highest level of patient care.
 - Regimen is initiated at the appropriate time.
 - Patient receives their medication as directed.
 - Medications in situations requiring immediacy are effectively facilitated.
 - Medication orders are clear and concise.
 - Activity complies with the health system's policies and procedures.
 - Tests correspond with the recommended monitoring plan.
 - Tests are ordered and performed at the appropriate time.
- Takes appropriate action based on analysis of monitoring results (redesign regimen or monitoring plan if needed).
- Appropriately initiates, modifies, discontinues, or administers medication therapy as authorized.
- Responds appropriately to notifications and alerts in electronic medical records and other information systems that support medication ordering processes (based on factors such as patient weight, age, gender, comorbid conditions, drug interactions, renal function, and hepatic function).
- Provides thorough and accurate education to patients and caregivers, when appropriate, including information on medication therapy, adverse effects, adherence, appropriate use, handling, and medication administration.
- Addresses medication- and health-related problems and engages in preventive care strategies, including vaccine administration, as appropriate.

Objective R1.1.7: (Applying) Communicate and document direct patient care activities appropriately in the medical record, or where appropriate.

Criteria:

- Accurately and concisely communicates drug therapy recommendations to health care professionals representing different disciplines.
- Appropriately documents patient/caregiver communication and relevant direct patient care activities in a timely manner.

Objective R1.1.8: (Applying) Demonstrate responsibility for patient outcomes.

Criteria:

- Gives priority to patient care activities.
- Routinely ensures all steps of the medication management process are completed.
- Assumes responsibility for medication therapy outcomes.
- Actively works to identify the potential for significant medication-related problems.
- Actively pursues all significant existing and potential medication-related problems until satisfactory resolution is obtained.
- Communicates with patients and family members/caregivers about their medication therapy.
- Determines barriers to patient compliance and makes appropriate adjustments.

Goal R1.2: Ensure continuity of care during transitions between care settings.

Objective R1.2.1: (Applying) Manage transitions of care effectively.

Criteria:

- Provides accurate, pertinent, and timely follow-up information when patients transfer to another facility, level of care, pharmacist, or provider, as appropriate.
- Follows up on identified drug-related problems, additional monitoring, and education in a timely and caring manner.
- Participates in medication histories/reconciliation when necessary. Takes appropriate and effective steps to help avoid unnecessary hospital admissions or readmissions.

Goal R1.3: Manage and facilitate delivery of medications.

Objective R1.3.1: (Applying) Facilitate delivery of medications following best practices and local organization policies and procedures.

Criteria:

- Correctly interprets appropriateness of a medication order before preparing or permitting the distribution of the first dose, including:
 - Identifying, clarifying, verifying, and correcting any medication order errors.
 - Identifying existing or potential drug therapy problems.
 - Considering complete patient-specific information.
 - Determining an appropriate solution to an identified problem.
 - Securing consensus from the prescriber for modifications to therapy.
 - Ensuring that the solution is implemented.
- Prepares medication using appropriate techniques and follows the organization's policies and procedures and applicable professional standards in emergent and non-emergent situations, including:
 - Ensures intravenous solutions are appropriately concentrated, without incompatibilities; stable; and appropriately stored.
 - Adhering to appropriate safety and quality assurance practices.
 - Preparing labels that conform to the health system's policies and procedures, as appropriate.
 - Ensuring that medication has all necessary and appropriate ancillary labels.
 - Inspecting the final medication before dispensing for accuracy.
- When dispensing medication products:
 - Follows the organization's policies and procedures.
 - Ensures the patient receives the medication(s) as ordered.
 - Ensures the integrity of medication dispensed.
 - Provides any necessary information for the patient and support/education for relevant interdisciplinary staff (e.g., nursing, respiratory therapy).
 - Ensures the patient receives medication on time.
- Obtains agreement on modifications to medication orders when acting in the absence of, or outside, an approved protocol or collaborative agreement.
- Assesses appropriate contents of automatic dispensing cabinets and optimizes as necessary.
- References appropriate literature resources to ensure use of proper practices regarding compatibility and concentrations.

Objective R1.3.2: (Applying) Manage aspects of the medication-use process related to formulary management.

Criteria:

- Follows appropriate procedures regarding exceptions to the formulary in compliance with policy.
- Ensures non-formulary medications are evaluated, dispensed, administered, and monitored in a manner that ensures patient safety.

- Ensures that patients' own medications for use in the emergency department are in compliance with organization policy.

Objective R1.3.3: (Applying) Facilitate aspects of the medication-use process.

Criteria:

- Demonstrates commitment to medication safety.
- Makes effective use of technology to aid in decision-making and increase safety.
- Effectively prioritizes workload and organizes workflow.
- Checks accuracy of medications dispensed, including correct patient identification, medication, dosage form, label, dose, number of doses, and expiration dates; and proper repackaging and relabeling medications, including compounded medications (sterile and nonsterile).

Competency Area R2: Advancing Practice and Improving Patient Care

Goal R2.1: Demonstrate ability to manage formulary and medication-use processes, as applicable to the organization.

Objective R2.1.1: (Creating) Prepare or revise a drug class review, monograph, treatment guideline, or protocol.

Criteria:

- Displays objectivity.
- Effectively synthesizes information from available literature and applies evidenced-based principles for advancing pharmacotherapy knowledge.
- Consults relevant sources.
- Considers medication-use safety and resource utilization.
- Uses the appropriate format.
- Effectively communicates any changes in medication formulary, medication usage, or other procedures to appropriate parties.
- Demonstrates appropriate assertiveness and timeliness in presenting pharmacy concerns, solutions, and interests to internal and external stakeholders.
- When appropriate, may include proposals for medication-safety technology improvements.

Objective R2.1.2: (Analyzing) Identify opportunities for improvement of the medication-use system.

Criteria:

- Identifies problems and opportunities for improvement.
- Analyzes relevant background data.
- Evaluates data generated by health information technology or automated systems to identify opportunities for improvement.
- Utilizes best practices to identify opportunities for improvements.
- When needed, makes medication-use policy recommendations based on a review of practice standards, guidelines, and other evidence (e.g., National Quality Measures, Institute for Safe Medication Practices alerts, Joint Commission sentinel alerts).

Goal R2.2: Demonstrate ability to conduct a quality improvement or research project to improve patient care or for advancing the pharmacy profession.

Ideally, objectives R2.2.1-R2.2.6 will be addressed through residents working on one quality improvement or research project. However, if this is not possible, all objectives must be addressed by the end of the residency year and can be addressed through work on more than one project.

Objective R2.2.1: (Analyzing) Identify and/or demonstrate understanding of specific project topic.

Criteria:

- Appropriately identifies or understands problems and opportunities for improvement or research projects.
- Uses best practices or evidence-based principles to identify opportunities for improvements.
- Conducts a comprehensive literature search and draws appropriate conclusions.
- Determines an appropriate research question or topic for a practice-related project of significance to patient care that can realistically be addressed in the desired time frame.
- Accurately evaluates or assists in the evaluation of data generated by health information technology or automated systems to identify opportunities for improvement.

Objective R2.2.2: (Creating) Develop a plan or protocol for the project.

Criteria:

- Develops specific aims, selects an appropriate study design, and develops study methods to answer the research question(s).
- Applies safety design practices (e.g., standardization, simplification, human factors training, lean principles, FOCUS-PDCA, STROBE other process improvement or research methodologies) appropriately and accurately.
- Considers who or what will be affected by the project.
- Plan for improvement includes appropriate reviews and approvals required by the department or organization and addresses concerns of all stakeholders.
- Applies evidence-based and/or basic pharmacoeconomic principles, if needed.
- Identifies and obtains necessary approvals (e.g., IRB, quality review board, funding) and responds promptly to feedback or reviews for a practice-related project.
- Acts in accordance with the ethics of research on human subjects, if applicable.
- Plan design is practical to implement.
- Develops and follows an appropriate research or project timeline.

Objective R2.2.3: (Evaluating) Collect and evaluate data for the project.

Criteria:

- Collects the appropriate types of data as required by project design.
- Uses appropriate electronic data and information from internal information databases, external online databases, appropriate Internet resources, and other sources of decision support.
- Uses appropriate methods for analyzing data.
- Considers the impact of the limitations of the project or research design on the interpretation of results.
- Accurately and appropriately develops plan to address opportunities for additional changes.
- Improvement plan, if applicable, is based on appropriate data.

Objective R2.2.4: (Applying): Implement an improvement project or conduct research activities.

Criteria:

- Implements the project as specified in its design.
- Follows established timeline.
- Effectively presents plan (e.g., accurately recommends or contributes to recommendation for operational change, formulary addition or deletion, implementation of medication guideline or restriction, or treatment protocol implementation) to appropriate audience.

- Demonstrates appropriate assertiveness in presenting pharmacy concerns, solutions, and interests to external stakeholders.
- Gains necessary commitment and approval for implementation.
- Effectively communicates any changes in clinical practice, medication formulary, medication usage, or other procedures to appropriate stakeholders.

Objective R2.2.5: (Evaluating) Assess changes or need to make changes related to the project.

Criteria:

- Correctly identifies need for additional modifications or changes based on outcome.
- Uses continuous quality improvement (CQI) principles to assess the success of the implemented change and sustainability if applicable.
- Accurately and appropriately develops plan to address opportunities for additional changes.

Objective R2.2.6: (Creating) Effectively develop and present, orally and in writing, a final project or research report suitable for publication at a local, regional, or national conference.

Criteria:

- Report includes implications for changes to or improvement in clinical care or pharmacy practice.
- Outcome of change is reported accurately to appropriate stakeholders(s) and policy-making bodies according to departmental or organizational processes.
- Oral presentations use effective communication and presentation skills and tools (e.g., handouts, slides) to convey points successfully.
- Report uses an accepted manuscript style suitable for publication in the professional literature.

Competency Area R3: Leadership and Management

Goal R3.1: Demonstrate leadership skills for successful self-development in the provision of patient care.

Objective R3.1.1: (Applying) Demonstrate personal, interpersonal, and teamwork skills critical for effective leadership in the provision of patient care.

Criteria:

- Demonstrates ability to lead interprofessional teams.
- Uses effective communication skills and styles.
- Demonstrates effective negotiation skills.
- Demonstrates understanding of perspectives of various health care professionals.
- Manages conflict effectively.
- Effectively expresses benefits of personal profession-wide leadership and advocacy.
- Effectively provides leadership in patient care related services, including interprofessional teams (e.g., cardiac arrest, rapid response, stroke teams).

Objective R3.1.2: (Applying) Apply a process of ongoing self-evaluation and personal performance improvement in the provision of patient care.

Criteria:

- Accurately summarizes own strengths and areas for improvement (in knowledge, values, qualities, skills, and behaviors).
- Effectively uses a self-evaluation process for developing professional direction, goals, and plans.
- Effectively engages in self-evaluation of progress on specified goals and plans.
- Demonstrates ability to use and incorporate constructive feedback from others.

- Effectively uses principles of continuous professional development (CPD) planning (reflect, plan, act, evaluate, record/review).

Goal R3.2: Demonstrate management skills in the provision of patient care.

Objective R3.2.1: (Applying) Contribute to departmental management.

Criteria:

- Helps identify and define significant departmental needs.
 - Staffing needs.
 - Scheduling and contingencies.
 - Staff qualifications.
 - Assesses and develops educational opportunities.
- Helps develop plans that address departmental needs.
 - Orientation.
 - Training and supervision.
 - Competency development.
 - Effectively participate in, or evaluate, strategic plan.
 - Regulatory compliance.
- Participates effectively on committees or informal work groups to complete group projects, tasks, or goals.
- Participates effectively in implementing changes, using change management and quality improvement best practices and tools, consistent with team, departmental, and organizational goals.

Objective R3.2.2: When presented with a drug shortage, identify appropriate alternative medications.

Criteria:

- States resources for identifying medications in short supply.
- Demonstrates understanding of strategies for making optimal choices for alternative medications.
- Demonstrates understanding of the organization's system for communicating information regarding drug shortages.

Objective R3.2.3: Participate in the organization's system for reporting medication errors and adverse drug events (ADEs).

Criteria:

- Appropriately and accurately determines, investigates, reports, tracks, and trends adverse drug events, medication errors, and efficacy concerns using accepted institutional resources and programs.
- Create an objective report of the medication error, ADE, or near miss event in the organization's reporting system.
- If applicable, analyze medication error, ADE, or near miss events to determine root cause.
- If applicable, develop a plan to improve process that led to medication error or near miss event in the emergency department.

Objective R3.2.4: (Applying) Manage one's own emergency medicine practice effectively.

Criteria:

- Evaluate clinical practice activities for potential contributions to scholarship.
- Accurately assesses successes and areas for improvement in managing one's own practice.
- Makes accurate, criteria-based assessments of one's own ability to perform practice tasks.
- Regularly integrates new learning into subsequent performances of a task until expectations are met.
- Demonstrates personal commitment to and adheres to organizational and departmental policies and procedures.
- Routinely seeks applicable learning opportunities.
- Demonstrates effective workload and time-management skills.

- Assumes responsibility for personal work quality and improvement.
- Is well prepared to fulfill responsibilities (e.g., patient care, presentations, projects, meetings).
- Sets and meets realistic goals and timelines.
- Demonstrates awareness of own values, motivations, and emotions.
- Demonstrates enthusiasm, self-motivation, and a “can-do” approach.
- Strives to maintain a healthy work–life balance.
- Works collaboratively within the organization’s political and decision-making structure.
- Demonstrates pride in and commitment to the profession through appearance and personal conduct.
- Develop a plan to pursue board certification.
- Demonstrates pride in and commitment to emergency medicine through membership in professional organizations related to emergency medicine pharmacy.

Competency Area R4: Teaching, Education, and Dissemination of Knowledge

Goal R4.1: Provide effective medication and practice-related education to patients, caregivers, health care professionals, students, and the public.

Objective R4.1.1: (Applying) Design effective educational activities.

Criteria:

- Accurately defines educational needs, including learning styles, with regard to target audience (e.g., individual versus group) and learning level (e.g., health care professional versus patient, student versus PGY1 resident).
- Selects topics of significance to emergency medicine pharmacy as outlined in the appendix.
- Defines educational objectives that are specific, measurable, at a relevant learning level (e.g., applying, creating, evaluating), and address the audiences’ defined learning needs.
- Plans use of teaching strategies that match learner needs, including active learning (e.g., patient cases, polling).
- Selects content that is relevant, thorough, evidence based (using primary literature where appropriate), timely and reflects best practices.
- Includes accurate citations and relevant references and adheres to applicable copyright laws.

Objective R4.1.2: (Applying) Use effective presentation and teaching skills.

Criteria:

- Demonstrates rapport with learners.
- Captures and maintains learner/audience interest throughout the presentation.
- Implements planned teaching strategies effectively.
- Effectively facilitates audience participation, active learning, and engagement in various settings (e.g., small or large group, distance learning).
- Presents at appropriate rate and volume and without exhibiting poor speaker habits (e.g., excessive use of “um” and other interjections).
- Body language, movement, and expressions enhance presentations.
- Summarizes important points at appropriate times throughout.
- Transitions smoothly between concepts.
- Effectively uses audio-visual aids and handouts to support learning activities.

Objective R4.1.3: (Applying) Use effective written communication to disseminate knowledge.

Criteria:

- Demonstrates thorough understanding of the topic.
- Writes in a manner that is easily understandable and free of errors.
- Includes critical evaluation of the literature and knowledge advancements or a summary of what is currently known on the topic.
- Develops and uses tables, graphs, and figures to enhance reader’s understanding of the topic when appropriate.
- Writes at a level appropriate for the target readership (e.g., physicians, pharmacists, other health care professionals, patients, the public).
- Notes appropriate citations and references.
- Creates one’s own work and does not engage in plagiarism.

Objective R4.1.4: (Applying) Appropriately assess effectiveness of education.

Criteria:

- Selects assessment method (e.g., written or verbal assessment or self-assessment questions, case with case-based questions, learner demonstration of new skill) that matches activity.
- Provides timely, constructive, and criteria-based feedback to learner.
- If used, assessment questions are written in a clear, concise format that reflects best practices for test item construction.
- Determines how well learning objectives were met.
- Plans for follow-up educational activities to enhance or support learning and ensure that goals were met.
- Identifies ways to improve education-related skills.
- Obtains, reviews, and applies feedback from learners and others to improve effectiveness as an educator.

Goal R4.2: Effectively employ appropriate preceptor roles when engaged in teaching students, pharmacy technicians, or fellow health care professionals.

Objective R4.2.1: (Analyzing) When engaged in teaching, select a preceptor role that meets learners’ educational needs.

Criteria:

- Identifies which preceptor role is applicable for the situation (direct instruction, modeling, coaching, facilitating).
 - Selects direct instruction when learners need background content.
 - Selects modeling when learners have sufficient background knowledge to understand the skill being modeled.
 - Selects coaching when learners are prepared to perform a skill under supervision.
 - Selects facilitating when learners have performed a skill satisfactorily under supervision.

Objective R4.2.2: (Applying) Effectively employ preceptor roles (instructing, modeling, coaching, or facilitating).

Criteria:

- Instructs students, technicians, or others as appropriate.
- Models skills, including “thinking out loud,” so learners can “observe” critical-thinking skills.
- Coaches, including effective use of verbal guidance, feedback, and questioning, as needed.
- Facilitates, when appropriate, by allowing learner independence and using indirect monitoring of performance.

Competency Area: R5: Management of Medical Emergencies

Goal R5: Participate in and exercise leadership in the management of medical emergencies.

Objective R5.1.1: (Applying) Demonstrate the essential role of the emergency pharmacist in the management of medical emergencies.

Criteria:

- Acts in accordance with the organization's policies and procedures for medical emergencies or emergency department surge capacity event.
- Effectively anticipates medication needs during medical emergencies.
- Proactively contributes to management of medical emergencies by making patient-specific, evidence-based recommendations to the interdisciplinary team.
- Accurately prepares medications and calculates doses during medical emergencies.
- Effectively addresses patient safety concerns that may arise when members of the interdisciplinary team are required to make complex care decisions under time constraints.
- Obtains certification in Advanced Cardiac Life Support. If available, obtains certifications in Pediatric Advanced Life Support, Advanced Trauma Life Support (audit), Advanced Burn Life Support, and Advanced HazMat Life Support.
- Participates in simulation activities as available at the organization.

Objective R5.1.2: (Applying) Exercise leadership as a team member in the management of medical emergencies.

Criteria:

- Quickly analyzes situation to identify potential causes of patient instability.
- Collaborates with interdisciplinary team to identify appropriate treatment during medical emergencies.
- Contributes to the success of the interdisciplinary team by tactfully assessing recommendations made by the team during medical emergencies or debriefing.
- Contributes to the success of the interdisciplinary team by tactfully offering suggestions for medications omitted by the team during medical emergencies.

Objective R5.1.3: (Complex Overt Response) When allowed by the organization, exercise skill in the administration of emergency medications.

Criteria:

- Ensure the five rights of medication administration including: right patient; right drug; right dose; right route; and right time.
- Perform aseptic technique (when time permits) when preparing and administering intravenous, intraosseous, or intramuscular medications.
- Ensure patency of intravenous or intraosseous lines prior to administration.
- When administering medications intramuscularly, select appropriate site of administration based on medication (volume, concentration) and patient specific factors (preferred sites based on age, patient's hemodynamic status, and predicted absorption of medication).
- Evaluate patient's ability to swallow prior to the administration of oral medication.

Competency Area R6: Management of Toxicology Patients

Goal R6.1: Describe the role of the poison center or medical toxicologist in the care of the toxicology patient.

Objective R6.1.1: (Understanding) Explain the collaboration between the medical toxicologist, poison center and emergency department.

Criteria:

- Demonstrates understanding of the role of poison centers in the care of toxicology patients.
- Demonstrates understanding of the role of the medical toxicologist in the care of toxicology patients.
- Demonstrates understanding of specific situations in which the emergency medicine clinical pharmacist/poison center may optimize patient care.
- Explains the pharmacy training requirements for board certification in clinical toxicology.

Goal R6.2: Demonstrate the ability to provide appropriate evidenced-based recommendations for the patient in need of toxicologic intervention.

Objective R6.2.1: (Evaluating) Assess patients in need of toxicologic intervention.

Criteria:

- Demonstrates understanding of the general approach to treating toxicology patients.
- Demonstrates understanding of common toxidromes and their presentation in the initial assessment of the patient.
- Effectively selects and recommends options for decontamination, as appropriate, for patients presenting to the emergency department.
- Demonstrates understanding of resources available to gather information related to toxic ingestions.
- Effectively uses medical references to gather information related to toxic ingestion or exposure management and treatment.
- Identifies and explains the most common exposures as specified by the American Academy of Clinical Toxicology (AACT).

Objective R6.2.2: (Applying) Participate in the management of a patient in need of toxicologic intervention.

Criteria:

- Effectively uses recommended physiologic monitoring and diagnostic testing options for specific ingestions or exposures.
- Demonstrates understanding of how to interpret physical exam, physiologic monitoring, laboratory data, and diagnostic testing results for specific ingestions or exposures.
- Explains the mechanism of action of toxins in acute and chronic poisoning or exposure.

Objective R6.2.3: (Creating) Prioritize and specify appropriate pharmacologic and supportive measures for the management of a patients in need of toxicologic intervention.

Criteria:

- Demonstrates understanding of the time sensitivity of antidote administration for specific toxins.
- Appropriately considers patient-specific data in determination of antidote or other supportive treatment.
- Explains the mechanism of action of antidote therapy in treating toxicologic ingestions or exposures.

- Determines appropriate dosing and administration of common antidotes.
- Uses appropriate monitoring during common antidote administration.
- Demonstrates understanding of exposures common to various geographic locations (e.g., envenomations in the South and West) and specific practice settings (rural versus urban versus industrial).
- Develops appropriate evidence-based plans for the care of toxicologic patients until hospital discharge.

Elective Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Emergency Medicine

Competency Area E1: Academia

Goal E1.1: Demonstrate understanding of key elements of the academic environment and faculty roles within it.

Objective E1.1.1: (Understanding) Demonstrates understanding of key elements of the academic environment and faculty roles within it.

Criteria:

- Accurately describes variations in the expectations of different colleges/schools of pharmacy for teaching, practice, research, and service, including public versus private colleges/schools of pharmacy and relationships between scholarly activity and teaching, practice, research and service.
- Accurately describes the academic environment, including how the decisions by university and college administration impact the faculty and how outside forces (e.g., change in the profession, funding source, accreditation requirements) that impact administrator and faculty roles.
- Accurately describes faculty roles and responsibilities.
- Accurately describes the types and ranks of faculty appointments, including the various types of appointments (e.g., non-tenure, tenure-track, and tenured faculty), various ranks of faculty (e.g., instructor, assistant professor, associate professor, full professor), and the role and implications of part-time and adjunct faculty as schools continue to expand and faculty shortages occur, and promotion and tenure process for each type of appointment, including types of activities that are considered in the promotion process and for tenure.
- Accurately explains the role and influence of faculty in the academic environment, including faculty in governance structure (e.g., the faculty senate, committee service) and faculty related to teaching, practice, research, and service roles (e.g., curriculum development and committee service).
- Accurately identifies resources available to help develop academic skills, including the role of academic-related professional organizations (e.g., AACP) and other resources to help develop teaching skills and a teaching philosophy.
- Accurately identifies and describes ways that faculty maintain balance in their roles.
- Accurately describes typical affiliation agreements between a college of pharmacy and a practice site (e.g., health system, hospital, clinic, community pharmacy).

Goal E1.2: Exercise case-based and other teaching skills essential to pharmacy faculty.

Objective E1.2.1: (Applying) Develop and deliver cases for workshops and exercises for laboratory experiences.

Criteria:

- Identifies the appropriate level of case-based teachings for small group instruction.
- Identifies appropriate exercises for laboratory experiences.
- Provides appropriate and timely feedback to improve performance.

Objective E1.2.2: (Evaluating) Compare and contrast methods to prevent and respond to academic and profession dishonesty and adhere to copyright laws.

Criteria:

- Accurately evaluates physical and attitudinal methods to prevent academic dishonesty.

- Accurately describes methods of responding to incidents of academic dishonesty.
- Accurately explains the role of academic honor committees in cases of academic dishonesty.
- Identifies examples and methods to address unprofessional behavior in learners.
- Accurately describes copyright regulations as related to reproducing materials for teaching purposes.
- Accurately describes copyright regulations as related to linking and citing on-line materials.

Goal E1.3: Develops and practices a philosophy of teaching.

Objective E1.3.1: (Creating) Develop or update a teaching philosophy statement.

Criteria:

- Teaching philosophy includes:
 - Self-reflection on personal beliefs about teaching and learning.
 - Identification of attitudes, values, and beliefs about teaching and learning.
 - Illustrates personal beliefs on practice and how these beliefs and experiences are incorporated in a classroom or experiential setting with trainees.
 - If updating, reflect on how one's philosophy has changed.

Objective E1.3.2: (Creating) Prepare a practice-based teaching activity.

Criteria:

- Develops learning objectives using active verbs and measureable outcomes.
- Plans teaching strategies appropriate for the learning objectives.
- Ensures activity is consistent with learning objectives in course syllabus.
- Uses materials that are appropriate for the target audience.
- Organizes teaching materials logically.
- Plans relevant assessment techniques.
- When used, develops examination questions that are logical, well-written, and test the learners' knowledge rather than their test-taking abilities.
- Participates in a systematic evaluation of assessment strategies (e.g., post-exam statistical analysis) when appropriate.

Objective E1.3.3: (Applying) Deliver a practice-based educational activity, including didactic or experiential teaching, or facilitation.

Criteria:

- Uses effective skills in facilitating small and large groups.
- Incorporates at least one active learning strategy in didactic experiences appropriate for the topic.
- For experiential activities:
 - Organizes student activities (e.g., student calendar).
 - Effectively facilitates topic discussions and learning activities within the allotted time.
 - Effectively develops and evaluates learner assignments (e.g., journal clubs, presentations, SOAP notes).
 - Effectively assesses student performance.
 - Provides constructive feedback.

Objective E1.3.4: (Creating) Effectively document one's teaching philosophy, skills, and experiences in a teaching portfolio.

Criteria:

- Portfolio includes:
 - Teaching philosophy.
 - Curriculum vitae.

- Teaching materials including slides and other handouts for each teaching experience.
- Documented self-reflections on one’s teaching experiences and skills, including strengths, areas for improvement, and plans for working on the areas for improvement.
- Peer/faculty evaluations.
- Student/learner evaluations.

Competency Area E2: Leadership and Practice Management Skills

Goal E2.1: Exhibits additional skills of a practice leader.

Objective E2.1.1: (Creating) Develops an effective proposal for a new emergency medicine pharmacy initiative.

Criteria:

- Effectively employs clinical, humanistic, and economic outcome strategies to justify emergency medicine pharmacy services, as applicable.

Objective E2.1.2: (Applying) Implements an effective proposal for a new emergency medicine pharmacy service.

Criteria:

- Employs effective strategies to implement a new initiative
- Appropriately evaluates outcomes of the new initiative.
- Appropriately documents outcomes of new initiative.

Competency Area E3: Medication-Use Evaluation

Goal E3.1: Lead a medication-use evaluation.

Objective E3.1.1: (Evaluating) Lead a medication-use evaluation related to care of emergency medicine patients.

Criteria:

- Explain the medication-use processes and patients’ vulnerability to medication errors or adverse drug events (ADEs).
- Utilizes best practices to identify opportunities for improvements.
- Evaluates data generated by health information technology or automated systems to identify opportunities for improvement.
- Identifies problems and opportunities for improvement and analyzes relevant background data.
- Demonstrates a systematic approach to develop medication-use evaluation.
- Analyze the structure and process and measure outcomes of the medication-use processes.
- When needed, makes medication-use policy recommendations based on a review of practice standards, guidelines, and other evidence (e.g., National Quality Measures, Institute for Safe Medication Practices alerts, Joint Commission sentinel alerts).
- Other examples include performing an MUE, or implementing some metric or measure in the practice setting, evaluating results, and suggesting a plan for improvement.
- Demonstrates appropriate confidence and assertiveness in presenting pharmacy concerns, solutions, and interests to internal and external stakeholders.
- Implements approved changes, as applicable.

Goal E3.2: Develop communication strategies related to formulary restrictions.

Objective E3.2.1: (Creating) Formulate effective strategies for communicating formulary restrictions to emergency medicine providers.

Criteria:

- Demonstrates understanding of types of communication to disseminate formulary information.
- Identifies instances when formulary changes should be communicated immediately.
- Develops communication related to formulary changes or restrictions.

Goal E3.3: Participate in the health system's formulary process for pharmacotherapeutic agents used in the emergency department setting.

Objective E3.3.1: (Creating) Prepare monographs for pharmacotherapeutic agents used in the emergency department setting to make formulary status recommendations.

Criteria:

- Applies evidenced-based principles in reviewing data on pharmacotherapeutic class.
- Consults sources relevant to the emergency department.
- Considers medication-use safety and resource utilization.
- Displays objectivity and relevance of agent(s).
- Effectively synthesizes information from the available literature.

Objective E3.3.2: (Creating) Make recommendations for pharmacotherapeutic class decisions based on comparative reviews concerning the patient populations within the emergency department setting.

Criteria:

- Demonstrates leadership and appropriate assertiveness in presenting pharmacy concerns, solutions, and interests.
- Considers impact of class decision on patient length of stay and revisit rates.
- Considers pharmaco-economic impact to the health care system.
- Considers exceptions to the formulary, if applicable, in compliance with policy.

Competency Area E4: Emergency Medicine Pharmacy Information

Goal E4.1: Provide concise, applicable, comprehensive, and timely responses to formalized requests for drug information pertaining to emergency medicine from patients, health care providers, and the public.

Objective E4.1.1: (Analyzing) Discriminate between the requesters' statement of need and the actual drug information need by asking for appropriate additional information.

Criteria:

- Demonstrates understanding of the characteristics of a clearly stated clinical question.
- Understands the time-frame the requester requires a response.

Objective E4.1.2: (Creating) Formulate a systematic, efficient, and thorough procedure for retrieving drug information.

Criteria:

- Demonstrates understanding of the characteristics of each of the available resources for biomedical literature.
- Able to effectively use resources to obtain appropriate primary, secondary, and tertiary literature to answer the question.
- State sources of evidence-based meta-analysis reviews.

Objective E4.1.3: (Analyzing) Determine from all retrieved biomedical literature the appropriate information to evaluate.

Criteria:

- Demonstrates the ability to narrow the literature based on intended content and scope of search.
- Determines which references are most applicable based on publication date, desired article type for inclusion, and content.

Objective E4.1.4: (Evaluating) Evaluate the usefulness of biomedical literature gathered.

Criteria:

- Effectively assesses the potential for bias of the author or preparer of all forms of drug information.
- Determines whether a study's methodology is adequate to support its conclusions.
- Determines whether the endpoints established for a study are appropriate.
- Demonstrates understanding of:
 - Strengths and limitations of different study designs.
 - Methods used to test study end point.
 - Effects of various methods of patient selection (e.g., healthy volunteers, patients, or patients with different disease severity) on study outcomes.
 - Effects of various methods of blinding (e.g., double-blind, single-blind, open-label, observational research designs) on study outcomes.
 - Types of pharmacotherapy studies (e.g., pharmacokinetic, economic, dynamic) and the kind(s) of data analysis appropriate for each.
 - How the choice of statistical methods used for data analysis affects the interpretation of study results and conclusions.
 - Determines if a study's findings are statistically and/or clinically significant.

Objective E4.1.5: (Creating) Formulate responses to drug information requests based on analysis of the literature.

Criteria:

- Responds to drug information requests in a timely manner.
- Demonstrates the ability to utilize appropriate references when formulating a response.
- Communicates responses professionally.
- Tailors the response based on those requesting the information (e.g., pharmacist versus physician versus nurse).

Objective E4.1.6: (Evaluating) Assess the effectiveness of drug information recommendations.

Criteria:

- Provides timely, constructive, and criteria-based instructions and feedback to those executing recommendations.
- Determines how closely the recommendations were followed.
- Identifies ways to improve the delivery of drug information recommendations.
- Obtains, reviews, and applies feedback from others to improve effectiveness in delivering drug information recommendations.

Goal E4.2: Develop a core library of references appropriate for emergency medicine pharmacy practice.

Objective E4.2.1: (Applying) Develop and maintain a core library of primary, secondary, and tertiary references appropriate for emergency medicine pharmacy practice, education, and research.

Criteria:

- Includes references which may be current to clinical practice or historically significant.
- Demonstrates the ability to scrutinize references for inclusion into core library of references.
- Identifies methods learners are interested in using for application in educational activities (e.g., didactic lectures/cited references, blogs, podcasts, webinars, simulation training).
- Demonstrates ability to apply preferred learning methods into practice, education or research.

Competency Area E5: Management of Mass Casualty Events

Goal E5.1: Participate in the planning or management of mass casualty events.

Objective E5.1.1: (Creating) Participate in the development or revision of the emergency medicine elements of organizational plans for the management of mass casualty events.

Criteria:

- Include the essential emergency medicine-related components of an organization's plan for the management of mass casualty events.
- Ensure involvement of those who should participate in the development of an organization's plan for the management of mass casualty events.
- Participates effectively on committees or informal work groups to plan and prepare for mass casualty event response.

Objective E5.1.2: (Applying) Exercise skill in the training of staff or implementing programs as specified in the organization's emergency preparedness plans.

Criteria:

- Helps identify and define significant departmental needs related to preparation and training for mass casualty events.
 - Manpower/staffing.
 - Regulatory compliance.
- Identify or develops educational opportunities for mass casualty training including:
 - Didactic or small group review content.
 - Simulation training.
 - Training of pharmacy and non-pharmacy health care providers.

Competency Area E6: Medical Writing

Goal E6.1: Write and submit for publication an emergency medicine pharmacy-related article.

Objective E6.1.1: (Applying) Write an article for a publication on an emergency medicine pharmacy-related topic.

Criteria:

- Selects appropriate publication for the article (e.g., newsletter, abstract, or peer-reviewed).
- Writes in a style appropriate for the audience of the publication (e.g., health care professional or the public).

Objective E6.1.2: (Creating) Submit an article on an emergency medicine-related topic.

Criteria:

- Article is suitably formatted.
- Follows appropriate submission procedures.
- Effectively addresses reviewer comments, if applicable.

Competency Area E7: Pre-Hospital Care

Goal E7.1: Demonstrates understanding of the various pre-hospital professionals in the provision of care of emergency medicine patients.

Objective E7.1.1: (Applying) Demonstrates teamwork skills in collaborating with pre-hospital professionals during the care of emergency medicine patients.

Criteria:

- Appropriately identifies various pre-hospital team members.
- Understands pre-hospital protocols and medication formularies.
- Identifies interventions or treatments administered prior to hospital arrival.
- Participates in direct patient care experiences with different types of pre-hospital professionals as allowed by institutional policies and procedures.

Objective E7.1.2: (Applying) Demonstrates understanding of the organization's system for communicating to and receiving information from pre-hospital professionals.

Criteria:

- Understands the limitations of information given from pre-hospital professionals at the time of initial evaluation.
- Explains the pathways in which institutional providers receive or communicate with pre-hospital professional.

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The design group comprised the following emergency medicine pharmacy practitioners, residency program directors, and ASHP staff: Nicole M. Acquisto, PharmD, FCCP, BCCCP, ACCP representative Emergency Medicine Clinical Pharmacy Specialist, Associate Professor, Department of Emergency Medicine University of Rochester Medical Center; Abby Bailey, PharmD, BCPS, Emergency Medicine Clinical Pharmacy Specialist, Clinical Coordinator, Emergency Medicine Director, PGY2 Emergency Medicine Pharmacy Residency, Assistant Adjunct Professor, Pharmacy, University of Kentucky HealthCare; Kristin H. Eginger, PharmD, BCPS, BCCCP, PGY2 Emergency Medicine Residency Program Director, Clinical Pharmacist, Emergency Medicine, CaroMont Regional Medical Center; John H. Patka, Pharm.D., BCPS, Emergency Medicine Clinical Pharmacy Specialist, PGY2 Emergency Medicine Pharmacy Residency Program Director, Grady Memorial Hospital, Atlanta; Suprat Saely, Pharm.D., BCPS, FCCM, Clinical Pharmacist Specialist, Emergency Medicine, Clinical Coordinator, Emergency Medicine Services, PGY-2 Emergency Medicine Pharmacy Residency Program Director, Detroit Receiving Hospital and University Health Center; Christopher M. Scott, PharmD, BCPS, FASHP, FCCM, ASHP, Commission on Credentialing representative, Vice President of Clinical Services, Eskenazi Health, Indianapolis; Joseph Saseen, Pharm.D., BCPS, FCCP, Professor and Vice Chair, University of Colorado School of Pharmacy; Katrin S. Fulginiti, B.S. Pharm., MGA, Director, Operations, Accreditation Services Office, ASHP; Eric M. Grace, M.S.T., Director, Standards Development and Training, Accreditation Services Office, ASHP. The contribution of reviewers is gratefully acknowledged.

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The effective date for implementation of these educational outcomes, goals and objectives is July 1, 2018.

Appendix

Core Areas or Types of Patient Care Experiences

The list of topics below represents core therapeutic areas, disease states, and emergency medicine topics that graduates of PGY2 Emergency Medicine programs are expected to have adequate knowledge of to provide patient care and comprehensive pharmacotherapy management. PGY2 Emergency Medicine programs must provide sufficient experiences for residents to meet this requirement.

Residents are required to have direct patient care experience for topics listed in the first column, “**Required Direct Patient Experience**”. Topics in the second and third columns, “**Required Direct or Non-direct Patient Experience**” and “**Elective Direct or Non-direct Patient Experience**” may be covered by direct patient experience, case-based application, didactic instruction, topic discussion, simulation, or other alternative approach. Elective topics, in the third column, may be included if applicable to the patient population.

Programs should track progress on the topic areas throughout the residency year.

Topic Areas	Required		Elective
	Direct Patient Experience	Direct or Non-direct Patient Experience	Direct or Non-direct Patient Experience
Cardiovascular	<ul style="list-style-type: none"> Acute coronary syndromes Acute decompensated heart failure Hypertensive urgency/emergency 	<ul style="list-style-type: none"> Acute aortic dissection Arrhythmias (atrial or ventricular) 	<ul style="list-style-type: none"> Pericardial tamponade Pericarditis Pulmonary hypertension
Dermatology		<ul style="list-style-type: none"> Burns (thermal, chemical, electrical) Drug Reactions Stevens Johnson Syndrome/Toxic Epidermal Necrolysis Topical and local anesthesia 	<ul style="list-style-type: none"> Erythema multiforme Gout exacerbation Rash (e.g., poison ivy)
Endocrine	<ul style="list-style-type: none"> Glycemic control Hyperglycemic crisis 	<ul style="list-style-type: none"> Adrenal crisis/insufficiency Myxedema coma Thyroid storm 	<ul style="list-style-type: none"> SIADH
Emergency Preparedness		<ul style="list-style-type: none"> Decontamination Disaster preparedness/ National incident management system Medical Surge Capacity and Capability 	<ul style="list-style-type: none"> Advanced HAZMAT life support Bioterrorism Nerve agents Radiation exposure
Environmental		<ul style="list-style-type: none"> Hyperthermia Hypothermia 	<ul style="list-style-type: none"> Altitude illness Carbon monoxide Drowning/near drowning
Gastrointestinal and Hepatic	<ul style="list-style-type: none"> Acute Upper and Lower Gastrointestinal bleeding 	<ul style="list-style-type: none"> Acute liver failure/cirrhosis 	<ul style="list-style-type: none"> Esophageal foreign body Pancreatitis

Topic Areas	Required		Elective
	Direct Patient Experience	Direct or Non-direct Patient Experience	Direct or Non-direct Patient Experience
	<ul style="list-style-type: none"> Nausea/vomiting 	<ul style="list-style-type: none"> Constipation /diarrhea Peptic ulcer disease 	
Hematology	<ul style="list-style-type: none"> Reversal of anticoagulants Thromboembolic disease (e.g., deep vein thrombosis, pulmonary embolism) 	<ul style="list-style-type: none"> Benign heme disorders (e.g., anemias, hemophilia, sickle cell disease) Coagulopathies 	<ul style="list-style-type: none"> Hypercalcemia of malignancy Tumor lysis syndrome
Infectious Diseases	<ul style="list-style-type: none"> Bites (animal, human) Influenza Pneumonia Sepsis Sexual transmitted infections Skin and soft tissue infections Urinary tract infection Vaccinations 	<ul style="list-style-type: none"> Conjunctivitis Dental infections Epiglottitis Endocarditis Intra-abdominal infections Meningitis Occupational/non-occupational antiretroviral post exposure prophylaxis Sinusitis/otitis media Streptococcal pharyngitis 	<ul style="list-style-type: none"> Bone/joint infections Febrile neutropenia Food and waterborne illness Hepatitis Parasites/worms Toxic shock syndromes Tuberculosis Wilderness medicine
Neurology	<ul style="list-style-type: none"> Acute hemorrhagic stroke Acute ischemic stroke Status epilepticus/ seizures 	<ul style="list-style-type: none"> Increased intracerebral pressure management Migraine and headaches 	<ul style="list-style-type: none"> Neuroleptic malignant syndrome Myasthenia gravis Ventriculostomy
Obstetrics		<ul style="list-style-type: none"> Ectopic pregnancy Preeclampsia and eclampsia Resuscitation in pregnancy 	<ul style="list-style-type: none"> Miscarriage/ spontaneous abortion
Pain and Sedation	<ul style="list-style-type: none"> Acute agitation Acute pain management Post-intubation sedation/analgesia Procedural sedation 	<ul style="list-style-type: none"> Psychosis and delirium 	
Pulmonary	<ul style="list-style-type: none"> Asthma exacerbation Chronic obstructive pulmonary disease exacerbation Rapid sequence intubation (RSI) 	<ul style="list-style-type: none"> Mechanical ventilation Noninvasive airway management 	<ul style="list-style-type: none"> Acute respiratory distress syndrome (ARDS) Pneumothorax
Renal and Genitourinary	<ul style="list-style-type: none"> Acid base disorders Acute kidney injury/End-stage renal disease Fluids and electrolytes 	<ul style="list-style-type: none"> Priapism Renal colic/ urolithiasis Renal replacement therapy Rhabdomyolysis 	

Topic Areas	Required		Elective
	Direct Patient Experience	Direct or Non-direct Patient Experience	Direct or Non-direct Patient Experience
Resuscitation	<ul style="list-style-type: none"> Advanced cardiac life support Hemodynamic monitoring/management Routes of medication administration Shock states 	<ul style="list-style-type: none"> Pediatric advanced life support 	<ul style="list-style-type: none"> Mechanical devices (e.g., ECMO, ECLS, ventricular assisted devices) Surgical airways
Special Populations		<ul style="list-style-type: none"> Age-specific (pediatric and geriatric) dosing considerations Angioedema (ACEI induced and hereditary) Pediatric/ neonatal febrile seizures Resuscitation in neonatal and pediatric 	<ul style="list-style-type: none"> Common infections in children (e.g., croup, meningitis, otitis media/externa, pertussis, RSV, sepsis)
Toxicology	<ul style="list-style-type: none"> Acetaminophen Approach to the toxic patient Gastric decontamination/elimination Opioids Salicylates Withdrawal syndromes 	<ul style="list-style-type: none"> Antidepressants/Antipsychotics Beta-blockers and calcium channel blockers Occupational exposures Sedatives 	<ul style="list-style-type: none"> Antiepileptics Antihypertensives Caustic ingestions Cyanide Digitalis Heavy metals Iron Poisonous plants Toxic alcohols
Trauma	<ul style="list-style-type: none"> Antibiotic prophylaxis 	<ul style="list-style-type: none"> Coagulopathy of trauma Open fractures Spinal cord injury Traumatic brain injury Trauma resuscitation 	<ul style="list-style-type: none"> Massive transfusion Thoracostomy/thoracotomy