



<p><b>Required and Elective Educational Outcomes, Goals, Objectives, and Instructional Objectives for Postgraduate Year One (PGY1) Pharmacy Residency Programs</b> <b>2<sup>nd</sup> Edition – effective July 2008</b></p>
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**Explanation of the Contents of This Document:**

The educational outcomes, goals, and objectives below are to be used in conjunction with the *Accreditation Standard for Postgraduate Year One (PGY1) Pharmacy Residency Programs*. Users of this document will want to refer to the accompanying glossary to assure a shared understanding of terms.

The order in which the required educational outcomes is presented in this document does not suggest relative importance of the outcome, amount of time that should be devoted to teaching the outcome, or sequence for teaching.

Each of the document's objectives has been classified according to educational taxonomy (cognitive, affective, or psychomotor) and level of learning. An explanation of the taxonomies is available elsewhere.<sup>1</sup>

The educational outcomes are divided into those that are required and those that are elective. The required outcomes, including all of the goals and objectives falling under them, must be included in the design of all programs. The elective outcomes are provided for those programs that wish to add to the required outcomes. Programs selecting an elective outcome are not required to include all of the goals and objectives falling under that outcome. In addition to the potential elective outcomes contained in this document, programs are free to create their own elective outcomes with associated goals and objectives. Each of the goals falling under the program's selection of program outcomes (required and elective) must be evaluated at least once during the resident's year.

**Educational Outcomes (Outcome):** Educational outcomes are statements of broad categories of the residency graduates' capabilities.

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<sup>1</sup> Nimmo, CM. Developing training materials and programs: creating educational objectives and assessing their attainment. In: Nimmo CM, Guerrero R, Greene SA, Taylor JT, eds. Staff development for pharmacy practice. Bethesda, MD: ASHP; 2000.

Educational Goals (Goal): Educational goals listed under each educational outcome are broad sweeping statements of abilities

Educational Objectives OBJ: Resident achievement of educational goals is determined by assessment of the resident’s ability to perform the associated educational objectives below each educational goal. . Each objective is classified by taxonomy (cognitive, affective, or psychomotor) and level of learning within that taxonomy to facilitate teaching and assessment of performance.

Instructional Objectives IO: Instructional objectives (text written in unbolded italics) are the result of a learning analysis of each of the educational objectives. They are offered as a resource for preceptors encountering difficulty in helping residents achieve a particular educational objective. The instructional objectives falling below the educational objectives suggest knowledge and skills required for successful performance of the educational objective that the resident may not possess upon entering the residency year. Instructional objectives are teaching tools only. They are not required in any way nor are they meant to be evaluated.

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### **Required By PGY1 Pharmacy Residency Accreditation Standard**

#### ***Outcome R1: Manage and improve the medication-use process.***

Goal R1.1: Identify opportunities for improvement of the organization’s medication-use system.

OBJ R1.1.1 (Comprehension) Explain the organization’s medication-use system and its vulnerabilities to adverse drug events (ADEs).

*IO Explain the central concepts of systems theory.*

*IO Explain the concept of system error.*

*IO Explain the definitions of the various terms associated with adverse drug events (e.g., medication misadventure, medication error, adverse drug reaction, error, accident, systems error, individual error, latent error).*

*IO State sources of information on the design, implementation, and maintenance of safe medication-use systems.*

*IO From both the pharmacy department perspective and the organization perspective explain the potential for contribution to the occurrence of adverse drug events by the use of automation and information technology.*

*IO From both the pharmacy department perspective and the organization perspective explain the role that automation and information technology play in preventing adverse drug events.*

*IO Explain the meaning of the term “culture of safety.”*

OBJ R1.1.2 (Analysis) Analyze the structure and process and measure outcomes of the medication-use system.

- IO *Explain methods for analyzing a medication-use system's structure.*
    - IO *Explain how inputs to the medication-use system such as patients, staff, and environment make up its structure.*
  - IO *Explain methods for analyzing processes within a medication-use system (e.g., root cause analysis, failure mode and effect analysis).*
    - IO *Explain how the interactions between clinicians and patients constitute processes in the medication-use system.*
    - IO *Exercise skill in process-mapping, a type of flowchart depicting the steps in a process, with identification of responsibility for each step and the key measures*
    - IO *Exercise skill in cause-and-effect diagramming.*
    - IO *Explain the organization's policies and procedures for handling a drug recall.*
    - IO *Explain the role of medication-use evaluation (MUE) in measuring medication-use processes.*
  - IO *Explain methods for measuring outcomes of the medication-use system.*
    - IO *Generate examples of the outcomes of a medication-use process which are changes in patients' health status (e.g. length of stay; acuity).*
    - IO *Explain the characteristics of a clinically significant ADE.*
      - IO *Explain various methods, including decision trees, for determining the significance of adverse drug events.*
      - IO *Explain how to categorize medication errors using the ASHP Guidelines on Preventing Medication Errors in Hospitals.*
      - IO *Explain how to categorize medication errors using the National Coordinating Council for Medication Error Reporting and Prevention's medication error index for categorizing errors.*
      - IO *Explain how to categorize medication errors using one's own institution's categorization methodology.*
  - IO *When a clinically significant ADE is identified, report the event following the organization's policies and procedures.*
  - IO *Explain the role of the MUE in measuring outcomes of the medication-use process.*
- OBJ R1.1.3 (Evaluation) Identify opportunities for improvement in the organization's medication-use system by comparing the medication-use system to relevant best practices.
- IO *When a clinically significant ADE is identified, participate in determining the presence of any similar potential ADEs.*
  - IO *Participate in the pharmacy department's ongoing process for tracking and trending ADEs.*
  - IO *Explain how basic safety design principles such as standardization, simplification, and the employment of human*

*factors training can minimize the incidence of error in the medication-use process.*

- IO Explain safe practices for selecting and securing alternative medications when shortages occur and for adjusting the formulary and notifying prescribers.*
- IO Explain safe practices for the storage, dispensing, administration, and security of pharmaceuticals.*
- IO Use the results of an MUE to identify opportunities for improvement in the medication-use process.*
- IO Explain how to use information on how to design, implement, and maintain safe medication-use systems from external sources to identify opportunities for improvement in the organization's medication-use system.*

Goal R1.2: Design and implement quality improvement changes to the organization's medication-use system.

OBJ R1.2.1 (Comprehension) Explain the process for developing, implementing, and maintaining a formulary system.

- IO Identify the components of a formulary system.*
- IO Explain the approval process for establishing a formulary.*
- IO Explain the role of committees in addressing formulary issues.*
- IO Explain how formularies are revised and maintained.*
- IO Explain procedures regarding exceptions to the formulary.*
- IO Explain the process of making additions and deletions to the formulary including those resulting from drug shortages.*
- IO Explain how to customize an existing drug monograph for use at your site (e.g, the FIX)*
- IO Explain effective methods of communicating changes to the formulary including those resulting from drug shortages.*

OBJ R1.2.2 (Evaluation) Make a medication-use policy recommendation based on a comparative review (e.g., drug class review, drug monograph).

- IO State the elements of a comparative review.*
- IO State sources to consult in the preparation of a comparative review.*
- IO Explain the importance of including consideration of medication-use safety in the preparation of a comparative review.*

OBJ R1.2.3 (Synthesis) Participate in the identification of need for, development of, implementation of, and evaluation of an evidence-based treatment guideline/protocol related to individual and population-based patient care.

- IO Define treatment guidelines and protocols.*
- IO Explain the indications/rationale for using guidelines and protocols.*
- IO Explain guidelines/protocols as they relate to: patient care activities; provider networks; provider incentives; cost and reimbursement controls; utilization management; quality*

*measurement; consumer incentives; accreditation; and benefit analysis (if applicable).*

*IO Explain the use of evidence-based medicine in the development of treatment guidelines/protocols.*

*IO Explain the process by which criteria for treatment guidelines/protocols are developed.*

*IO Explain effective strategies for gaining necessary commitment and approval for use of a treatment guideline/protocol.*

*IO Explain the importance of providing outcome information to the prescriber/provider as support for evaluative decisions on program continuance or revision.*

*IO Explain methods for assessing the effectiveness/impact of guidelines and protocols.*

*IO Explain the importance of assessing the clinical, economic and humanistic outcomes of treatment guidelines/protocols related to patient care.*

**OBJ R1.2.4 (Synthesis)** Design and implement pilot interventions to change problematic or potentially problematic aspects of the medication-use system with the objective of improving quality.

*IO Explain the importance of continually reassessing medication-use policies.*

*IO Exercise skill in the revision of a policy or procedure when necessitated by the implementation of a change in a medication-use process.*

**Goal R1.3:** Prepare and dispense medications following existing standards of practice and the organization's policies and procedures.

**OBJ R1.3.1 (Evaluation)** Interpret the appropriateness of a medication order before preparing or permitting the distribution of the first dose.

*IO State the elements of a complete medication order and the essentials of legibility and accuracy.*

*IO Use effective prescriber education techniques to secure agreement on modifications to medication orders.*

*IO Document modifications to medication orders according to the organization's policies and procedures.*

**OBJ R1.3.2 (Application)** Follow the organization's policies and procedures to maintain the accuracy of the patient's medication profile.

**OBJ R1.3.3 (Application)** Prepare medication using appropriate techniques and following the organization's policies and procedures.

*IO Explain standards of practice for the preparation of medications.*

*IO Explain the organization's quality assurance standards for the preparation of medications.*

*IO Prepare intravenous admixtures using aseptic technique.*

*IO Prepare chemotherapeutic agents observing rules for safe handling of cytotoxic and hazardous medications.*

*IO Appraise admixture solutions for appropriate concentrations, rate, compatibilities, stability, clarity, coring, and storage*

*IO Formulate strategies for preparing extemporaneously compounded medications to produce the desired end products.*

*IO Label medication products following the organization's policies and procedures.*

OBJ R1.3.4 (Application) Dispense medication products following the organization's policies and procedures.

*IO Compare and contrast the procedures used to dispense medications across the continuum of care settings.*

*IO Follow a systematic procedure for checking the accuracy of medications dispensed, including correct patient identification, correct medication, correct dosage form, correct dose, correct number of doses, expiration dates, and properly repackaged and relabeled medications.*

*IO Follow departmental procedures and standards of practice to insure the integrity of medication dispensed throughout the organization.*

*IO Follow appropriate policies and procedures to document patients' medication refill histories.*

Goal R1.4: Demonstrate ownership of and responsibility for the welfare of the patient by performing all necessary aspects of the medication-use system.

OBJ R1.4.1 (Characterization) Display initiative in preventing, identifying, and resolving pharmacy-related patient-care problems.

*IO Explain the role of the pharmacist in preventing, identifying, and resolving pharmacy-related patient-care problems.*

*IO Explain the importance of contacting the appropriate parties when a problem is identified.*

*IO Explain the role of assertiveness in presenting pharmacy concerns, solutions, and interests.*

*IO Explain the pharmacist's obligation for absolute attention to detail in the preparation/distribution process.*

*IO Explain the interdependent relationship between operational tasks and clinical activities.*

*IO Explain the importance of follow-through of medication-use system activities.*

Goal R1.5: Provide concise, applicable, comprehensive, and timely responses to requests for drug information from patients and health care providers.

OBJ R1.5.1 (Analysis) Discriminate between the requesters' statement of need and the actual drug information need by asking for appropriate additional information.

*IO Explain the characteristics of a clearly stated clinical question.*

OBJ R1.5.2 (Synthesis) Formulate a systematic, efficient, and thorough procedure for retrieving drug information.

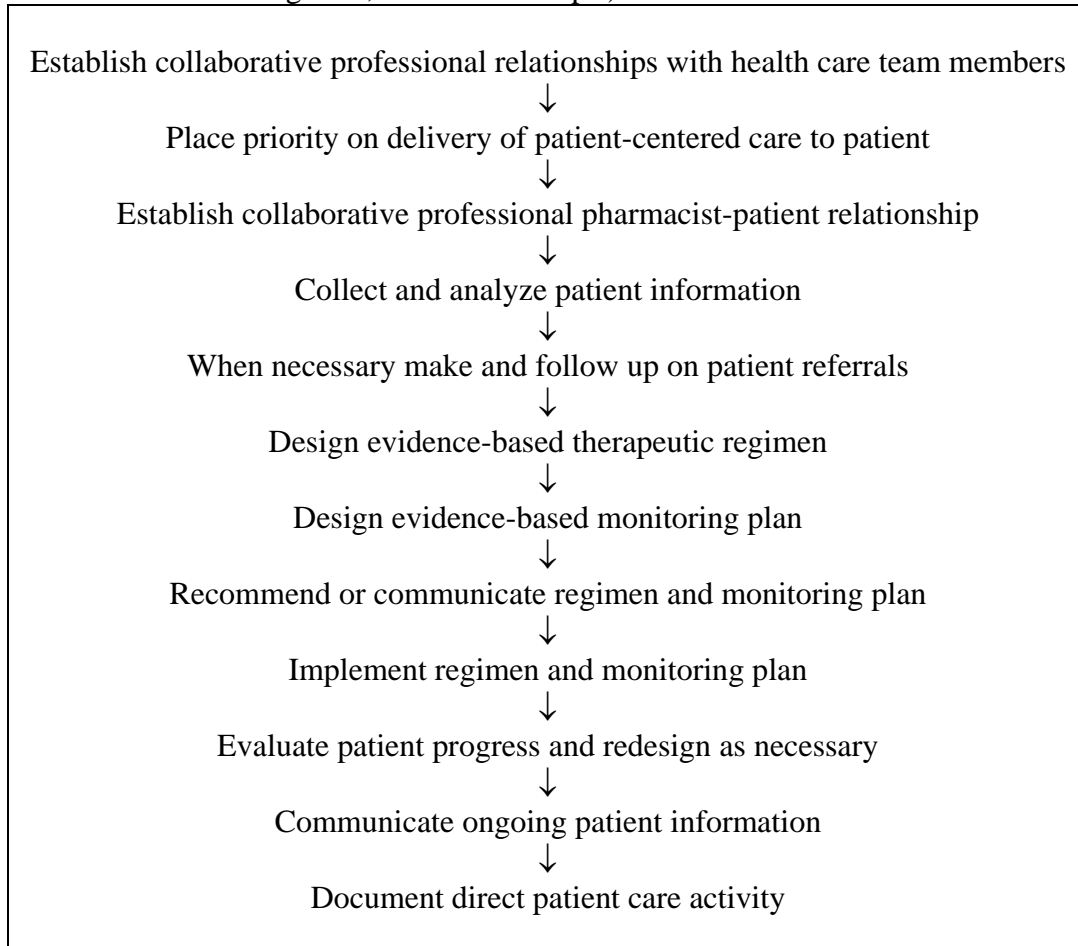
*IO Explain the strengths and weaknesses of manual and electronic methods of retrieving biomedical literature.*

*IO State sources of evidence-based metanalysis reviews.*

- IO Compare the characteristics of each of the available resources for biomedical literature.*
- OBJ R1.5.3 (Analysis) Determine from all retrieved biomedical literature the appropriate information to evaluate.
- OBJ R1.5.4 (Evaluation) Evaluate the usefulness of biomedical literature gathered.
  - IO Assess the potential for bias of the author or preparer of all forms of drug information.*
  - IO Determine whether a study's methodology is adequate to support its conclusions.*
    - IO Determine whether the endpoint established for a study is appropriate.*
      - IO Explain methods used to test study end point (e.g., pulmonary function studies).*
    - IO Explain the effects on study outcomes of various methods of patient selection (e.g., volunteers, patients, or patients with different disease severity).*
    - IO Explain the effects of various methods of blinding (e.g., double-blind, single-blind, open-research designs) on study outcomes.*
    - IO Explain the effects on study outcomes of various methods of drug assay and quality assurance procedures (e.g., high performance liquid chromatography, assay coefficient of variations).*
    - IO Explain the types of pharmacotherapy studies (e.g., kinetic, economic, dynamic) and the kind(s) of data analysis appropriate for each.*
    - IO Explain how the choice of statistical methods used for data analysis (e.g., t test, analysis of variance) affects the interpretation of study results and conclusions.*
    - IO Determine if a study's findings are clinically significant.*
    - IO Explain the strengths and limitations of different study designs.*
    - IO Determine whether a study's conclusions are supported by the study results.*
    - IO Explain how data from a study can be applied to expanded patient populations.*
- OBJ R1.5.5 (Synthesis) Formulate responses to drug information requests based on analysis of the literature.
- OBJ R1.5.6 (Synthesis) Provide appropriate responses to drug information questions that require the pharmacist to draw upon his or her knowledge base.
- OBJ R1.5.7 (Evaluation) Assess the effectiveness of drug information recommendations.
  - IO Explain all factors that must be assessed to determine the effectiveness of a response.*

***Outcome R2: Provide evidence-based, patient-centered medication therapy management with interdisciplinary teams.***

(When provided as part of the practice of direct patient care, this outcome always involves a series of integrated, interrelated steps.)



Goal R2.1: As appropriate, establish collaborative professional relationships with members of the health care team.

OBJ R2.1.1 (Synthesis) Implement a strategy that effectively establishes cooperative, collaborative, and communicative working relationships with members of interdisciplinary health care teams.

*IO Demonstrate knowledge of other team members' expertise, background, knowledge, and values in all interdisciplinary team interactions.*

*IO Explain the training and expected areas of expertise of the members of the interdisciplinary with which one works.*

*IO For each of the professions with which one interacts on an interdisciplinary team, explain the profession's view of its role and responsibilities in collaborations on patient-centered care.*

- IO Exercise skill in the use of individual roles and processes required to work collaboratively on interdisciplinary teams.*
- IO Define a collaborative professional working relationship.*
- IO Explain the structures and content of collaborative working relationships that are possible between the pharmacist and the physician and between the pharmacist and other health care professionals.*
- IO Explain the limits that are imposed on possible collaborative relationships by the presence or absence of guidelines, legal and regulatory requirements, and organizational policies and procedures.*
- IO Exercise skill in the use of group techniques to include communication, negotiation, delegation, time management, assessment of group dynamics, and consensus building.*
- IO Explain the principles and applications of negotiation as they apply to interdisciplinary team work.*
- IO Explain the principles and applications of delegation as they apply to interdisciplinary team work.*
- IO Explain the principles and applications of time management as they apply to interdisciplinary team work.*
- IO Explain the principles of group dynamics and how they apply to interdisciplinary team work.*
- IO Explain the principles of conflict management and how they apply to interdisciplinary team work.*
- IO Explain a systematic approach to building consensus.*
- IO Explain how interdisciplinary team members develop unique communication patterns (shared language).*
- IO Explain the importance of adhering to use of an interdisciplinary team's shared language.*
- IO Exercise skill in the coordination and integration of pharmacist's care with the contributions of other members of the interdisciplinary team.*

Goal R2.2: Place practice priority on the delivery of patient-centered care to patients.

OBJ R2.2.1 (Organization) Choose and manage daily activities so that they reflect a priority on the delivery of appropriate patient-centered care to each patient.

*IO Explain the meaning of patient-centered care and the rationale for its use.*

*IO Explain methods for prioritizing the delivery of care to patients when time or resources prohibit the delivery of full direct patient care services to all patients.*

Goal R2.3: As appropriate, establish collaborative professional pharmacist-patient relationships.

OBJ R2.3.1. (Synthesis) Formulate a strategy that effectively establishes a patient-centered pharmacist-patient relationship.

- IO Explain the meaning of the term “patient-centered” and the rationale for its use.*
- IO Explain the appropriate sharing of power and responsibility between the pharmacist, patient and caregivers in a patient-centered, pharmacist-patient relationship.*
- IO Explain why it is important that the pharmacist communicate with the patient in a shared and fully open manner in a patient-centered, pharmacist-patient relationship.*
- IO Explain the role of demonstrating respect for the patient’s individuality, emotional needs, values, and life issues in a patient-centered, pharmacist-patient relationship.*

Goal R2.4: Collect and analyze patient information.

OBJ R2.4.1 (Analysis) Collect and organize all patient-specific information needed by the pharmacist to prevent, detect, and resolve medication-related problems and to make appropriate evidence-based, patient-centered medication therapy recommendations as part of the interdisciplinary team.

- IO Identify the types of patient-specific information the pharmacist requires to prevent, detect, and resolve medication-related problems and to make appropriate evidence-based, patient-centered medication therapy recommendations as part of the interdisciplinary team.*
- IO Explain the role of collecting information regarding the patient’s culture, emotional needs, preferences, values, and life issues in formulating evidence-based, patient-centered care decisions.*
- IO Explain patient or disease specifics that would require the pharmacist to collect pharmacogenomic and/or pharmacogenetic information.*
- IO Explain issues surrounding confidentiality of patient information and the impact of HIPAA regulations on the collection and safeguarding of patient-specific information.*
- IO Explain signs and symptoms, epidemiology, risk factors, pathogenesis, natural history of disease, pathophysiology, clinical course, etiology, and treatment of diseases commonly encountered.*
- IO Explain the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacoeconomics, usual regimen (dose, schedule, form, route, and method of administration), indications, contraindications, interactions, adverse reactions, and therapeutics of medications in the treatment of diseases commonly encountered.*
- IO Explain current trends and issues in nontraditional therapy.*
- IO Use standard patient medical charts, records and/or internal electronic information databases to collect information that may be pertinent to prevent, detect, and resolve medication-related problems and to make informed evidence-based, patient-centered medication therapy recommendations to an interdisciplinary team.*

- IO Integrate effective communication techniques in interviews with patients, caregivers, health care professionals, or others so that the patient-specific information needed by the pharmacist for evidence-based, patient-centered care is collected.*
- IO When presented with a limited time frame (e.g., ambulatory care office visit) use an interview strategy that elicits maximum pertinent information*
- IO Explain effective phone techniques to be used to obtain information for the patient database.*
- IO Explain the impact of having discontinuous or fragmented patient-care information when developing an interview strategy for patients (e.g., patient seeing multiple caregivers, last visit 6 months ago).*
- IO Distinguish the meaning of non-verbal cues in patient encounters (e.g., broken sentences in an asthmatic patient, difficult ambulation in an arthritic patient).*
- IO When appropriate, measure patient vital signs and use appropriate physical assessment skills.*
- IO Determine the most reputable and credible source of required patient-specific information.*
- IO Record required patient-specific information in a manner that facilitates detecting and resolving medication-related problems and making appropriate evidence-based, patient-centered medication therapy recommendations to an interdisciplinary team.*
- IO In a setting where none exists, create an effective organizational system for recording patient-specific data.*

- OBJ R2.4.2 (Analysis) Determine the presence of any of the following medication therapy problems in a patient's current medication therapy:
1. Medication used with no medical indication
  2. Patient has medical conditions for which there is no medication prescribed
  3. Medication prescribed inappropriately for a particular medical condition
  4. Immunization regimen is incomplete
  5. Current medication therapy regimen contains something inappropriate (dose, dosage form, duration, schedule, route of administration, method of administration)
  6. There is therapeutic duplication
  7. Medication to which the patient is allergic has been prescribed
  8. There are adverse drug or device-related events or potential for such events
  9. There are clinically significant drug-drug, drug-disease, drug-nutrient, or drug-laboratory test interactions or potential for such interactions

10. Medical therapy has been interfered with by social, recreational, nonprescription, or nontraditional drug use by the patient or others
11. Patient not receiving full benefit of prescribed medication therapy
12. There are problems arising from the financial impact of medication therapy on the patient
13. Patient lacks understanding of medication therapy
14. Patient not adhering to medication regimen

- IO Explain psychological, cultural, and economic factors that influence patient compliance with prescribed medications.*
- IO Explain factors to consider when comparing the benefits and risks of an alternative medication therapy.*
- IO Explain factors to consider when trying to determine the likelihood that a reaction is occurring because of a medication.*
- IO Assess criteria for assessing the severity of an adverse drug reaction.*
- IO Explain acceptable approaches to the therapeutic management of an adverse drug reaction.*
- IO) Explain mechanisms of determining therapeutic consequence resulting from defective medications or drug products (e.g., exacerbation of asthma due to a defective inhaler).*
- IO Use a functional format to list patients' pharmacotherapy problems.*
- IO Prioritize patients' pharmacotherapy problems.*

OBJ R2.4.3 (Analysis) Using an organized collection of patient-specific information, summarize patients' health care needs.

Goal R2.5: When necessary, make and follow up on patient referrals.

OBJ R2.5.1 (Evaluation) When presented with a patient with health care needs that cannot be met by the pharmacist, make a referral to the appropriate health care provider based on the patient's acuity and the presenting problem.

- IO Explain the organization's process for making a patient referral.*
- IO Explain the information needed to make an appropriate referral.*
- IO Explain a systematic process for assessing the acuity of a patient's illness.*

OBJ R2.5.2 (Synthesis) Devise a plan for follow-up for a referred patient.

- IO Explain the importance of following up on patients who are referred to other health care providers.*
- IO Explain the importance of integrating follow-up information into the long-term management plan.*

Goal R2.6: Design evidence-based therapeutic regimens.

OBJ R2.6.1 (Synthesis) Specify therapeutic goals for a patient incorporating the principles of evidence-based medicine that integrate patient-specific data, disease and medication-specific information, ethics, and quality-of-life considerations.

- IO Explain the use of evidence-based consensus statements and guidelines in the setting of patient-specific therapeutic goals.*

- IO Explain how culture influences patients' perceptions of desirable outcomes.*
- IO Explain the importance of the patient's perception of desirable outcomes when setting therapeutic goals for a patient with functional limitations.*
- IO Explain the impact of quality-of-life issues on making decisions about therapeutic goals.*
- IO Explain ethical issues that may need consideration when setting therapeutic goals.*
- IO Compare and contrast the realistic limits of treatment outcomes among the various care settings.*
- IO Explain how a patient's age or mental status might affect the setting of therapeutic goals.*
- IO Explain how goals of others on the interdisciplinary team influence the specification and prioritization of therapeutic goals.*
- IO Explain unique aspects of the patient's role in the ambulatory care setting in determining his/her therapeutic goals.*

OBJ R2.6.2 (Synthesis) Design a patient-centered regimen that meets the evidence-based therapeutic goals established for a patient; integrates patient-specific information, disease and drug information, ethical issues and quality-of-life issues; and considers pharmacoeconomic principles. .

- IO Explain the use of evidence-based consensus statements and guidelines in the design of patient-specific therapeutic regimens.*
- IO Accurately interpret best evidence for use in the design of a patient-centered regimen for a specific patient.*
- IO Explain where and how to find the best possible sources of evidence for a specific patient case.*
- IO Explain how to conduct a search for relevant answers to a specific clinical question, including searches of resources that evaluate or appraise the evidence for its validity and usefulness with respect to a particular patient or population.*
- IO Explain how to integrate seemingly applicable findings of best evidence with clinical judgment to arrive at an optimal evidence-based regimen for a specific patient.*
- IO Explain how culture influences patients' perception of disease and how this affects responses to various symptoms, diseases, and treatments.*
- IO Explain how patient-specific pharmacogenomics and pharmacogenetics may influence the design of patients' medication regimens.*
- IO Explain additional concerns with compliance, cost, and route of administration when making decisions on medication regimens.*

Goal R2.7: Design evidence-based monitoring plans.

OBJ R2.7.1 (Synthesis) Design a patient-centered, evidenced-based monitoring plan for a therapeutic regimen that effectively evaluates achievement of the patient-specific goals.

- IO Explain the use of evidence-based consensus statements and guidelines in the design of patient-specific monitoring plans.*
- IO Explain cultural and social issues that should be considered when designing a monitoring plan.*
- IO Explain the importance of considering what is feasible and useful when designing a monitoring plan.*
- IO Compare and contrast various methods for monitoring patient adherence (e.g., refill rates, questioning, return demonstration).*
- IO Determine monitoring parameters that will measure achievement of goals for a therapeutic regimen.*
  - IO State customary drug-specific monitoring parameters for medical regimens commonly prescribed.*
  - IO Explain the relationship between what are normal value ranges for parameters and the influence on those ranges by a given disease state.*
- IO Identify the most reliable sources of data for measuring the selected parameters.*
- IO Define a desirable value range for each selected parameter, taking into account patient-specific information.*
- IO Explain factors that should influence the frequency and timing of parameter measurements in monitoring plans.*
- IO Explain effective approaches to assuring patient return for follow-up visits in the ambulatory setting.*
- IO Identify the most appropriate person to collect monitoring data (e.g., family member, nurse, patient).*

Goal R2.8: Recommend or communicate regimens and monitoring plans.

OBJ R2.8.1 (Application) Recommend or communicate a patient-centered, evidence-based therapeutic regimen and corresponding monitoring plan to other members of the interdisciplinary team and patients in a way that is systematic, logical, accurate, timely, and secures consensus from the team and patient.

- IO Explain the right of patients to refuse a treatment.*
- IO Explain the importance of explicitly citing the use of best evidence when recommending or communicating a patient's regimen and monitoring plan.*
- IO Explain what would be a pharmacist's responsible professional behavior in the circumstance that a patient refuses a proposed treatment.*
- IO Differentiate between circumstances where documenting in the chart is sufficient and when communication to team members requires immediacy.*

Goal R2.9: Implement regimens and monitoring plans.

OBJ R2.9.1 (Application) When appropriate, initiate the patient-centered, evidence-based therapeutic regimen and monitoring plan for a patient according to the organization's policies and procedures.

- IO Explain the requirements for a situation in which it is appropriate for the pharmacist to initiate a medication-therapy regimen.*
- IO Explain the organization's policies and procedures for ordering tests.*
- OBJ R2.9.2 (Application) Use effective patient education techniques to provide counseling to patients and caregivers, including information on medication therapy, adverse effects, compliance, appropriate use, handling, and medication administration.
- Goal R2.10: Evaluate patients' progress and redesign regimens and monitoring plans.
  - OBJ R2.10.1 (Evaluation) Accurately assess the patient's progress toward the therapeutic goal(s).
    - IO Gather data as specified in a monitoring plan.*
    - IO Explain factors that may contribute to the unreliability of monitoring results (e.g., patient-specific factors, timing of monitoring tests, equipment errors, and outpatient versus inpatient monitoring.)*
    - IO Determine reasons for a patient's progress or lack of progress toward the stated health care goal.*
    - IO Explain the importance of the analysis of trends over time in monitoring parameter measurements.*
    - IO Accurately assess the effectiveness of a patient-specific education program.*
    - IO Explain methods for assessing the effects of patient-specific education.*
  - OBJ R2.10.2 (Synthesis) Redesign a patient-centered, evidence-based therapeutic plan as necessary based on evaluation of monitoring data and therapeutic outcomes.
- Goal R2.11: Communicate ongoing patient information.
  - OBJ R2.11.1 (Application) When given a patient who is transitioning from one health care setting to another, communicate pertinent pharmacotherapeutic information to the receiving health care professionals.
  - OBJ R2.11.2 (Application) Ensure that accurate and timely medication-specific information regarding a specific patient reaches those who need it at the appropriate time.
    - IO Explain the importance of effective communication of modifications of the therapeutic plan to the patient and members of the interdisciplinary team.*
    - IO Determine instances in which there is urgency in communicating the results of monitoring to the interdisciplinary team.*
- Goal R2.12: Document direct patient care activities appropriately.
  - OBJ R2.12.1 (Analysis) Appropriately select direct patient-care activities for documentation.
  - OBJ R2.12.2 (Application) Use effective communication practices when documenting a direct patient-care activity.

OBJ R2.12.3 (Comprehension) Explain the characteristics of exemplary documentation systems that may be used in the organization's environment.

**Outcome R3: Exercise leadership and practice management skills.**

Goal R3.1: Exhibit essential personal skills of a practice leader.

OBJ R.3.1.1 (Characterization) Practice self-managed continuing professional development with the goal of improving the quality of one's own performance through self-assessment and personal change.

*IO Explain the systematic process by which professionals pursue expertise.*

*IO Formulate and adhere to an integrated system for staying current with, arranging, and storing pertinent practice-related literature.*

*IO State the literature pertinent to one's area of practice.*

*IO State sources of information outside of pharmacy that contain ideas and/or information that may be effectively applied to one's practice.*

*IO Explain the importance of storing practice-related information in an organized manner.*

*IO Explain the components of an effective self-assessment system.*

OBJ R3.1.2 (Characterization) Demonstrate pride in and commitment to the profession through appearance, personal conduct, and association membership.

*IO Explain guidelines for professional dress and its importance.*

*IO Explain strategies for maintaining personal self-control and professional decorum.*

*IO Explain the local, state, and national organizations and the activities of each that are essential to the developing pharmacy professional.*

*IO Explain why it is important to publish in the professional literature.*

*IO Explain why it is important to become actively involved in the leadership of professional associations.*

OBJ R3.1.3 (Characterization) Act ethically in the conduct of all job-related activities.

*IO Explain ethical/conflict of interest issues in business relationships.*

*IO Explain the system of ethical reasoning (consequentialist or nonconsequentialist) employed in arriving at a particular ethical decision.*

*IO Explain systems of ethical reasoning.*

*IO Explain ethical principles embodied in the American Pharmacists Association's Code of Ethics for Pharmacists.*

*IO Explain rules for attribution of sources of published work when preparing written documents or presentations.*

Goal R3.2: Contribute to departmental leadership and management activities.

- OBJ R3.2.1 (Synthesis) Participate in the pharmacy department's planning processes.
- IO Explain the principles and application of various approaches to pharmacy department planning, including the development of a departmental strategic plan.*
  - IO Explain the necessary relationship between the organization's and the department's vision, mission, and plans.*
- OBJ R3.2.2 (Comprehension) Explain the effect of accreditation, legal, regulatory, and safety requirements on practice.
- IO State current regulatory and safety requirements.*
  - IO Explain the importance of these regulations and safety requirements.*
  - IO Explain how the regulations and safety requirements affect practice.*
  - IO State the process by which the regulations and safety requirements are implemented.*
  - IO State the agencies responsible for regulating accreditation, legal, regulatory, and safety requirements.*
- OBJ R3.2.3 (Comprehension) Explain the principles of financial management of a pharmacy department.
- IO Explain the purposes of and how to access multiple sources of reimbursement.*
  - IO Explain the data elements of a productivity matrix (e.g., clinical activities, budgets, FTE justification).*
  - IO Explain the implications for pharmacy reimbursement of the current health care environment (regulatory issues, manpower shortages, Medicare Modernization Act, quality mandates).*
  - IO Explain sources of revenue for the pharmacy and health system.*
- OBJ R3.2.4 (Synthesis) Prioritize the work load, organize the work flow, and check the accuracy of the work of pharmacy technical and clerical personnel or others.
- IO Explain the principles of work delegation.*
  - IO Explain systematic approaches to organizing and keeping track of the work of multiple participants in a given work activity.*
  - IO Explain the importance of routine checks on accuracy of the work of pharmacy technical and clerical personnel or others under one's supervision.*
- Goal R3.3: Exercise practice leadership.
- OBJ R3.3.1 (Synthesis) Use knowledge of an organization's political and decision-making structure to influence accomplishing a practice area goal.
- IO Explain the importance of networking in achieving practice area and other professional goals.*
- OBJ R3.3.2 (Comprehension) Explain various leadership philosophies that effectively support direct patient care and pharmacy practice excellence.
- OBJ R3.3.3 (Application) Use group participation skills when leading or working as a member of a committee or informal work group.

- IO Explain effective strategies for leading a meeting.*
- IO Explain the role of delegation for task accomplishment in effective leadership.*

- OBJ R3.3.4 (Application) Use knowledge of the principles of change management to achieve organizational, departmental, and/or team goals.
  - IO Explain the principles of change management.*

**Outcome R4: Demonstrate project management skills.**

Goal R4.1: Conduct a practice-related project using effective project management skills.

- OBJ R4.1.1: (Synthesis) Identify a topic for a practice-related project of significance for pharmacy practice.
  - IO Explain the types of resident projects that will meet residency program project requirements and timeframe.*
  - IO Explain how one determines if a potential project topic is of significance in one's particular practice setting.*
  - IO Explain how to conduct an efficient and effective literature search for a project.*
- OBJ R4.1.2: (Synthesis) Formulate a feasible design for a practice-related project.
  - IO Explain the elements of a project proposal.*
  - IO When given a particular approved residency project, explain how to identify those individuals who will be affected by the conduct of the project and strategies for gaining their cooperation.*
  - IO When given a particular approved residency project, explain how to determine a timeline with suitable milestones that will result in project completion by an agreed upon date.*
- OBJ R4.1.3: (Synthesis) Secure any necessary approvals, including IRB and funding, for one's design of a practice-related project.
  - IO When given a particular proposed residency project, explain how to identify those key stakeholders who must approve that project.*
  - IO Explain the components that make up a budget for a practice-related project.*
  - IO Explain the role of the organization's IRB in the approval process of investigations involving human subjects.*
- OBJ R4.1.4: (Synthesis) Implement a practice-related project as specified in its design.
  - IO Explain strategies for keeping one's work on a project at a pace that matches with the timeline plan.*
  - IO When given a particular approved residency project, explain methods for organizing and maintaining project materials and documentation of the project's ongoing implementation.*
- OBJ R4.1.5: (Synthesis) Effectively present the results of a practice-related project.
- OBJ R4.1.6: (Synthesis) Successfully employ accepted manuscript style to prepare a final report of a practice-related project.

*IO When given a particular residency project ready for presentation, explain the type of manuscript style appropriate to the project and criteria to be met when using that style.*

OBJ R4.1.7: (Evaluation) Accurately assess the impact, including sustainability if applicable, of the residency project.

**Outcome R5: Provide medication and practice-related education/training.**

Goal R5.1 Provide effective medication and practice-related education, training, or counseling to patients, caregivers, health care professionals, and the public.

OBJ R5.1.1 (Application) Use effective educational techniques in the design of all educational activities.

*IO Design instruction that meets the individual learner's needs.*

*IO When given a particular patient data base, therapeutic regimen, and monitoring plan, explain the educational needs of the patient for successful implementation of the therapeutic regimen and monitoring plan.*

*IO Explain the concept of learning styles and its influence on the design of instruction.*

*IO Explain the importance of considering the learner's reading level when designing patient education.*

*IO Write appropriately worded educational objectives.*

*IO Design instruction to reflect the specified objectives for education or training.*

*IO Explain the match between instructional delivery systems (e.g., demonstration, written materials, videotapes) and specific types of learning commonly required of patients.*

*IO Design instruction that employs strategies, methods, and techniques congruent with the objectives for education or training.*

*IO Explain effective teaching approaches for the various types of learning required of patients (e.g., imparting information, teaching psychomotor skills, inculcation of new attitudes).*

OBJ R5.1.2 (Synthesis) Design an assessment strategy that appropriately measures the specified objectives for education or training and fits the learning situation.

*IO Explain appropriate assessment techniques for assessing the learning outcomes of pharmacist-provided educational or training programs.*

OBJ R5.1.3 (Application) Use skill in the four preceptor roles employed in practice-based teaching (direct instruction, modeling, coaching, and facilitation).

*IO Explain the stages of learning that are associated with each of the preceptor roles.*

OBJ R5.1.4 (Application) Use skill in case-based teaching.

- OBJ R5.1.5 (Application) Use public speaking skills to speak effectively in large and small group situations.
- IO Explain techniques that can be used to enhance audience interest.*
  - IO Explain techniques that can be used to enhance audience understanding of one's topic.*
  - IO Explain speaker habits that distract the audience.*
- OBJ R5.1.6 (Application) Use knowledge of audio-visual aids and handouts to enhance the effectiveness of communications.
- IO Use a systematic and educationally sound method for determining when it is appropriate to use handouts or visual aids and for selecting the appropriate aid.*
  - IO Explain accepted conventions for the design of visual aids and handouts.*
  - IO Exercise skill in the operation of audio-visual equipment.*

**Outcome R6: Utilize medical informatics.**

Goal R6.1: Use information technology to make decisions and reduce error.

- OBJ R6.1.1 (Comprehension) Explain security and patient protections such as access control, data security, data encryption, HIPAA privacy regulations, as well as ethical and legal issues related to the use of information technology in pharmacy practice.
- OBJ R6.1.2 (Application) Exercise skill in basic use of databases and data analysis software.
- IO Explain the principles and uses of databases in the management of large volumes of data*
  - IO Perform statistical analysis of data for the purposes of evaluating the significance of data*
- OBJ R6.1.3 (Evaluation) Successfully make decisions using electronic data and information from internal information databases, external online databases, and the Internet.
- IO Explain the type of data collected, transmitted and stored by information systems.*
  - IO Explain the impact on the quality of decision-making facilitated by information systems by the validity, reliability, and consistency of data put into the system.*
  - IO Explain the use and risks of decision support tools.*
  - IO Explain the sources, the benefits and potential risks of patient's drug and medical information on the Internet*

**Potential Electives for PGY1 Pharmacy Residency Programs**

**Outcome E1: Conduct pharmacy practice research.**

Goal E1.1: Design, execute, and report results of investigations of pharmacy practice-related issues.

OBJ E1.1.1 (Analysis) Identify potential practice-related issues that need to be studied.

OBJ E1.1.2 (Application) Use a systematic procedure for performing a comprehensive literature search.

OBJ E1.1.3 (Analysis) Draw appropriate conclusions based on a summary of a comprehensive literature search.

OBJ E1.1.4 (Synthesis) Generate a research question(s) to be answered by an investigation.

OBJ E1.1.5 (Synthesis) Develop specific aims and design study methods that will answer the question(s) identified.

*IO Explain the ethics of research on human subjects and the role of the IRB.*

OBJ E1.1.6 (Application) Use a systematic procedure to collect and analyze data.

OBJ E1.1.7 (Evaluation) Draw valid conclusions through evaluation of the data.

OBJ E1.1.8 (Synthesis) Use effective communication skills to report orally and in writing the results and recommendations of an investigation into a pharmacy practice-related issue.

Goal E1.2 Participate in clinical, humanistic and economic outcomes analyses.

OBJ E1.2.1 (Evaluation) Contribute to a prospective clinical, humanistic and/or economic outcomes analysis.

*IO Explain the principles and methodology of basic pharmacoeconomic analyses.*

*IO Explain the purpose of a prospective clinical, humanistic or economic outcomes analysis.*

*IO Explain study designs appropriate for a prospective clinical, humanistic and economic outcomes analysis.*

*IO Explain the technique and application of modeling.*

*IO Explain the types of data that must be collected in a prospective clinical, humanistic and economic outcomes analysis.*

*IO Explain possible reliable sources of data for a clinical, humanistic and economic outcomes analysis.*

*IO Explain methods for analyzing data in a prospective clinical, humanistic and economic outcomes analysis.*

*IO Explain how results of a prospective clinical, humanistic and economic outcomes analysis can be applied to internal business decisions and modifications to a customer's formulary or benefit design.*

OBJ E1.2.2 (Evaluation) Contribute to a retrospective clinical, humanistic, and/or economic outcomes analysis.

*IO Explain the purpose of a retrospective clinical, humanistic or economic outcomes analysis.*

- IO Explain study designs appropriate for a retrospective clinical, humanistic and economic outcomes analysis.*
- IO Explain the types of data that must be collected in a retrospective clinical, humanistic and economic outcomes analysis.*
- IO Explain the content and utilization of reports and audits produced by the pharmacy department.*
- IO Explain possible reliable sources of data for a retrospective clinical, humanistic and economic outcomes analysis.*
- IO Explain methods for analyzing data in a retrospective clinical, humanistic and economic outcomes analysis.*
- IO Explain the impact of limitations of retrospective data on the interpretation of results.*
- IO Explain how results of a retrospective clinical, humanistic and economic outcomes analysis can be applied to internal business decisions and modifications to a customer's formulary or benefit design.*

**Outcome E2: Exercise added leadership and practice management skills.**

- Goal E2.1: Contribute to the development of a new pharmacy service or to the enhancement of an existing service.
- OBJ E2.1.1 (Evaluation) Appraise a current pharmacy service or program to determine if it meets the stated goals.
  - OBJ E2.1.2 (Synthesis) Participate in the writing of a proposal for a marketable, new or enhanced pharmacy service.
    - IO Accurately identify unmet customer (i.e., patient, physicians, and other health care providers) needs.*
    - IO Use modeling to predict the financial outcome(s) of implementing a proposed new or enhanced service on meeting unmet customer needs.*
    - IO Accurately predict system and human resource needs for developing and implementing a new or enhanced service.*
    - IO Accurately predict the outcome(s) for patients of implementing a new or enhanced service.*
    - IO Accurately predict financial benefit to the organization of implementing a new or enhanced service.*
    - IO Explain the components of a new service (e.g., disease state management program).*
    - IO Explain the role of other health care providers in meeting the needs of patients involved in a new service (e.g., disease state management programs).*
    - IO Explain the process by which pharmacy databases are used to develop a new service (e.g., disease state management programs).*
    - IO Explain why and how potential shifts in market share should be factored into decisions on the marketability of a service.*
    - IO Explain the organization's desired format for a proposal for a new or enhanced pharmacy service.*

- OBJ E2.1.3 (Synthesis) Formulate an effective strategy for promoting a proposal for a new service.
  - IO Explain how to identify the stakeholders for a specific proposal.*
- Goal E2.2: Understand the pharmacy procurement process.
  - OBJ E2.2.1 (Comprehension) Explain the processes and contractual relationships that form the structure of the department's medication procurement system.
    - IO Explain the role of wholesalers and GPOs in the supply of medications.*
    - IO Explain the role of competitive contracting.*
    - IO Explain principles of inventory management.*
    - IO Explain special procedure for unique drug entities (e.g., controlled substances, refrigerated medications.)*
    - IO Explain issues surrounding the return or disposal of medications.*
- Goal E2.3: Manage the use of investigational drug products (medications, devices, and biologicals).
  - OBJ E2.3.1 (Application) Manage the use of investigational drug products (medications, devices, and biologicals) according to regulatory requirements, established protocols and the organization's policies and procedures.
- Goal E2.4: Understand the principles of a systematic approach to staff development in pharmacy practice.
  - OBJ E2.4.1 (Comprehension) Explain the steps in a systematic approach to staff development.
  - OBJ E2.4.2 (Comprehension) Explain the importance of approaching staff development systematically.
- Goal E2.5: Resolve conflicts through negotiation.
  - OBJ E2.5.1 (Application) Use effective negotiation skills to resolve conflicts.
- Goal E2.6: Understand the process of managing the practice area's human resources.
  - OBJ E2.6.1 (Comprehension) Explain recruitment strategies for a specific position.
    - IO Explain how to determine the duties of a specific position.*
    - IO Explain differences in the advertising approach for a position to be filled internally versus externally.*
    - IO Explain factors to consider when determining the individual's qualifications for a position.*
    - IO Explain factors to consider when deciding to hire internally versus externally.*
    - IO State the information to be included in an advertisement for a position.*
    - IO Explain the organization's policy regarding equal employment opportunity and affirmative action.*
    - IO Explain the impact of the American Disabilities Act on interviews.*
  - OBJ E2.6.2 (Comprehension) Explain the process used to interview and recommend personnel for employment.

- IO State the organization's and department's policies and procedures for screening and interviewing applicants.*
- IO Explain considerations in determining how many times to interview an applicant.*
- IO State what should be discussed and not discussed in an interview.*
- IO Explain considerations in determining with whom candidates should interview.*
- IO Explain considerations in determining how many candidates to interview.*
- IO State actions to pursue when none of the candidates interviewed is acceptable.*
- IO Explain considerations of how many references to require and how to check references.*
- IO State information to be included in an "offer to hire" letter.*
- OBJ E2.6.3 (Comprehension) Explain the importance of orientation and training for practice area personnel.
  - IO State the purposes of orientation and training.*
  - IO State the roles of the organization and of the department in orientation and training.*
  - IO State the subjects that should be covered in the department's orientation.*
  - IO State the subjects that should be covered in training for a specific position.*
  - IO Explain how to determine the length of training for a specific position.*
  - IO Explain an effective measure for determining that a new employee is sufficiently trained for his or her position.*
  - IO Explain the impact of the Family Medical Leave Act and union contract on human resources policy.*
  - IO Describe the organization's probationary period.*
- OBJ E2.6.4 (Comprehension) Explain the components of an employee performance evaluation system.
  - IO State the performance standards for a specific position.*
  - IO State effective methods for communicating performance standards and evaluation of performance to employees.*
  - IO Explain effective ways to measure work against objective and subjective performance standards.*
- OBJ E2.6.5 (Comprehension) Explain the principles and application of a progressive discipline process.
  - IO Explain the components of the progressive discipline process.*
  - IO State the benefits of the progressive discipline process to the employer and the employee.*
- Goal E2.7: Understand the process of establishing a pharmacy residency program.
  - OBJ E2.7.1 (Comprehension) Explain the steps involved in establishing a pharmacy residency program at a particular site.

*IO Explain the sources of published information to be used when establishing a residency program (i.e., accreditation regulations, accreditation standards, ASHP website).*

***Outcome E3: Demonstrate knowledge and skills particular to generalist practice in the home care practice environment.***

Goal E3.1: Understand the scope of services that might be provided in a typical home care practice.

OBJ E3.1.1 (Comprehension) Compare and contrast the scope of services that might be provided by a typical home care practice for a variety of health systems or stand-alone organizations.

OBJ E3.1.2 (Comprehension) Explain the relationship between the scope of services offered by a home care practice and the applicable legal, regulatory, and accreditation issues.

Goal E3.2: Determine the suitability of individual patients for home care.

OBJ E3.2.1 (Analysis) Collect and organize all patient-specific information needed by the home care pharmacist to determine the suitability of individual patients for home care.

*IO Identify the types of information the home care pharmacist requires to determine the suitability of individual patients for home care.*

OBJ E3.2.2 (Evaluation) Assess patients' suitability for home care.

*IO Explain criteria for acceptance into home care.*

*IO Explain factors to consider when determining the ability and willingness of a patient or caregiver to fulfill the tasks of home care.*

*IO Explain factors to consider when evaluating a potential home care patient's psychosocial and family support.*

Goal E3.3: Understand unique aspects of providing evidence-based, patient-centered medication therapy management with interdisciplinary teams in the home care environment.

OBJ E3.3.1: (Comprehension) Explain those aspects of providing evidence-based, patient-centered medication therapy management with interdisciplinary teams that are unique to the home care environment.

*IO Explain the rights and responsibilities of a home care patient.*

*IO Explain strategies for getting information from unwilling or inaccessible participants.*

*IO Explain additional concerns with compliance, cost, route of administration, and vascular access and medication devices when making decisions on medication regimens for home care patients.*

*IO Explain how to determine whether the first dose of medication should be administered at home or in a controlled-care setting.*

*IO State customary monitoring parameters for the effects of the use of access and administration devices.*

Goal E3.4: Understand unique aspects of preparing and dispensing medications for home care patients.

- OBJ E3.4.1: (Comprehension) Explain those aspects of preparing and dispensing medications that are unique to the home care environment.
- IO Select appropriate supplies for the patient's method of administration, access device and medication.*
  - IO Explain appropriate technique for care of a catheter and a catheter site.*
  - IO Explain procedures for administering medications used in the home care environment.*
  - IO Explain procedures for managing complications resulting from the administration of medications.*
  - IO Use knowledge of alternative delivery methods to determine the best way to get supplies and medications to the patient's home.*
- Goal E3.5: Understand unique aspects of participating in the management of medical emergencies occurring in the home care environment.
- OBJ E3.5.1 (Comprehension) Explain those aspects of participating in the management of medical emergencies that are unique when the medical emergency occurs in a home care setting.
- IO Explain what constitutes a medical emergency in the home care setting.*
- Goal E3.6: Manage the use, maintenance, and troubleshooting of medication administration equipment and medication-related equipment used in the management of home care patients.
- OBJ E3.6.1 (Synthesis) Solve operational problems related to the use and maintenance of medication administration equipment and medication-related equipment used in the management of home care patients.
- IO Explain proper maintenance procedures for medication administration equipment and medication-related equipment used in the management of home care patients.*
  - IO Devise effective troubleshooting strategies for medication administration equipment and medication-related equipment that is not working properly.*
  - IO Skillfully operate medication administration equipment and medication-related equipment used in the home.*
- OBJ E3.6.2 (Analysis) Participate in the development of criteria for selection of medication administration and medication-related equipment.
- Goal E3.7: Understand the appropriate relationship between the home care pharmacist and home care suppliers.
- OBJ E3.7.1 (Comprehension) Explain the role of the home care pharmacist in establishing policies for working with the pharmaceutical industry.
- IO State the home care practice's policies for working with the pharmaceutical industry.*
  - IO Explain the importance of establishing policies and procedures for working with the pharmaceutical industry.*
  - IO Explain an appropriate working relationship with the pharmaceutical industry including ethical considerations.*

OBJ E3.7.2 (Comprehension) Explain the role of the home care pharmacist in establishing policies for working with the manufacturers of medication-use related equipment and supplies used in home care.

*IO State the home care practice's policies for working with manufacturers of medication-use related equipment and supplies used in home care.*

*IO Explain the importance of establishing policies and procedures for working with manufacturers of medication-use related equipment and supplies used in home care.*

*IO Explain an appropriate working relationship with manufacturers of medication-use related equipment and supplies used in home care, including ethical considerations.*

Goal E3.8: Appreciate the complexity of the financial environment of home care practice.

OBJ E3.8.1 (Comprehension) Explain various factors that affect the financial environment of home care practice.

OBJ E3.8.2 (Comprehension) Explain the different types of payers in home care and the effect of that mix on the finances of the home care practice

OBJ E3.8.3 (Comprehension) Explain the ethical and pharmaceutical issues involved in providing home care to patients with little or no insurance coverage.

OBJ E3.8.4 (Comprehension) Explain the effect of patient mix (therapy type) on profitability.

OBJ E3.8.5 (Knowledge) Identify resources for financial and reimbursement advice when working in the home care environment.

Goal E3.9: Conduct ethical informational and marketing visits to payers, potential referral sources, and patients of the home care organization.

OBJ E3.9.1 (Synthesis) Formulate effective strategies for conducting ethical informational and marketing visits to payers, potential referral sources, and patients of the home care organization.

*IO Explain ethical issues involved in providing information about and marketing of home care services.*

OBJ E3.9.2 (Application) Use effective presentation techniques to conduct ethical informational or marketing visits to payers, potential referral sources, and patients of the home care organization.

***Outcome E4: Demonstrate knowledge and skills particular to generalist practice in the managed care practice environment.***

Goal E4.1: Maintain confidentiality of patient and proprietary business information.

OBJ E4.1.1 (Application) Observe legal and ethical guidelines for safeguarding the confidentiality of patient information.

*IO Explain patient confidentiality issues related to data collection, transmission, and storage by pharmacy information systems and by electronic medical records.*

*IO Explain situations unique to managed care that may raise the issue of confidentiality of patient information.*

- OBJ E4.1.2 (Application) Observe health system policy for the safeguarding of proprietary business information.
  - IO Explain the concept of "proprietary business information" and its importance in the conduct of business activities.*
  - IO Explain the role of written policy and tacit knowledge in the development of normative procedure for the disclosure of business information within a specific health system.*
- Goal E4.2: Understand the interrelationship of the pharmacy benefit management company, the health plan, and the delivery system functions of managed care.
  - OBJ E4.2.1 (Comprehension) Explain the health-plan functions of managed care, including benefit design and management, co-pay, formulary coverage, prior authorization, access, and contract negotiations (medication acquisition and/or network pharmacy).
    - IO Explain the difference between pharmacy risk and capitation.*
  - OBJ E4.2.2 (Comprehension) Explain the effect that the health plan has on the delivery functions of managed care.
  - OBJ E4.2.3 (Comprehension) Explain the interrelationship of the health plan and the delivery system functions of managed care.
- Goal E4.3: Understand unique aspects of providing evidence-based, patient-centered medication therapy management with interdisciplinary teams in the managed care environment.
  - OBJ E4.3.1: (Comprehension) Explain ways in which the provision of medication therapy management may differ when occurring in the managed care environment.
    - IO Explain strategies for getting information from unwilling or inaccessible participants.*

***Outcome E5: Participate in the management of medical emergencies.***

- Goal E5.1: Participate in the management of medical emergencies.
  - OBJ E5.1.1 (Evaluation) Exercise skill as a team member in the management of medical emergencies according to the organization's policies and procedures.
    - IO Explain the organization's policies and procedures for medical emergencies.*
    - IO Explain appropriate medication therapy in medical emergency situations.*
    - IO Explain unique considerations when preparing and dispensing medications and calculating doses during a medical emergency.*
    - IO Explain the importance of anticipating needs during a medical emergency.*

***Outcome E6: Provide drug information to health care professionals and/or the public.***

- Goal E6 1 Identify a core library, including electronic media, appropriate for a specific practice setting.

- OBJ E6.1.1 (Application) Use knowledge of standard resources to select a core library of primary, secondary, and tertiary references appropriate for a specific practice setting.
- IO Explain the contributions and limitations that use of internet accessible resources (e.g., the World Wide Web) can make to the acquisition and dissemination of drug information.*
- IO Explain the importance of evaluating the reliability and validity of information accessed through the World Wide Web.*
- Goal E6.2: Design and deliver programs that contribute to public health efforts.
- OBJ E6.2.1 (Comprehension) Explain the pharmacist's role in public health, including specific contributions to public health efforts that can be made by health-system pharmacists.
- OBJ E6.2.2 (Synthesis) Design and deliver programs for health care consumers that center on disease prevention and wellness promotion.
- IO State target audiences for prevention and wellness promotion and the relative priority of programming for each of these audiences.*
- IO State the data required to justify a program.*
- IO Explain the support needed to establish a program.*
- IO Explain potential problems and shortcomings associated with the maintenance of a wellness promotion program.*
- OBJ E6.2.3 (Synthesis) Participate in the development of organizational plans for emergency preparedness.

***Outcome E7: Demonstrate additional competencies that contribute to working successfully in the health care environment.***

- Goal E7.1: Use approaches in all communications that display sensitivity to the cultural and personal characteristics of patients, caregivers, and health care colleagues.
- OBJ E7.1.1 (Organization) Demonstrate sensitivity to the perspective of the patient, caregiver, or health care colleague in all communications.
- IO Explain the importance of adjusting one's communications according to the level of health literacy of the patient.*
- IO Explain common situations in the practice of pharmacy which can produce a difficult communications encounter.*
- IO Explain effective communications strategies that could be used in a difficult encounter including the use of active listening.*
- IO Explain the meaning of cultural competence.*
- IO Explain communication strategies that are appropriate for patients who are non-English speakers or who are impaired.*
- IO Explain ways in which communication strategy can be modified to accommodate the individual's personal characteristics.*
- Goal E7.2: Communicate effectively.
- OBJ E7.2.1 (Analysis) Use an understanding of effectiveness, efficiency, customary practice and the recipient's preferences to determine the appropriate type of, and medium and organization for, communication.

- IO Accurately identify the primary theme or purpose of one's written or oral communication.*
- IO Accurately determine what information will provide credible background to support or justify the primary theme of one's written or oral communication.*
- IO Properly sequence ideas in written and oral communication.*
- IO Accurately determine the depth of communication appropriate to one's audience.*
- IO Accurately determine words and terms that are appropriate to one's audience.*
- IO Accurately determine one's audience's needs.*
- IO Accurately identify the length of communication that is appropriate to the situation.*
- IO Explain the importance of assessing the listener's understanding of the message conveyed.*
- IO Explain how to assess the level of health literacy of a patient.*
- IO State sources of patient information that are adjusted for various levels of health literacy.*
- IO Explain techniques for persuasive communications.*
- IO Explain guidelines for the preparation of statements to be distributed to the media.*
- OBJ E7.2.2 (Complex Overt Response) Speak clearly and distinctly in grammatically correct English or the alternate primary language of the practice site.
- OBJ E7.2.3 (Application) Use listening skills effectively in performing job functions.
  - IO Explain the use of body language in listening to others.*
  - IO Explain verbal techniques that can be used to enhance listening to others.*
- OBJ E7.2.4 (Application) Use correct grammar, punctuation, spelling, style, and formatting conventions in preparing all written communications.
- Goal E7.3: Balance obligations to oneself, relationships, and work in a way that minimizes stress.
  - OBJ E7.3.1 (Synthesis) Devise an effective plan for minimizing stress while attending to personal needs, maintaining relationships, and meeting professional obligations.
    - IO Explain various approaches advocated for achieving balance in one's life.*
- Goal E7.4: Manage time effectively to fulfill practice responsibilities.
  - OBJ E7.4.1 (Application) Use time management skills effectively to fulfill practice responsibilities.
    - IO Explain an effective system for the management of one's time in professional practice.*
- Goal E7.5: Make effective use of available software and information systems.

- OBJ E7.5.1 (Application) Successfully search, retrieve, and manage electronic data from internal information databases, external online databases, and the Internet.
- IO Explain strategies for storing electronically-accessed information.*
  - IO Explain the strengths and weaknesses of various search engines.*
- OBJ E7.5.2 (Application) Exercise skill in the use of the organization's word-processing, spreadsheet, and presentation software.
- IO Explain the applicability of individual software programs to performing specific tasks.*
- OBJ E7.5.3 (Comprehension) Explain how an effectively functioning organizational information system is structured.
- IO Explain the meaning of various terms necessary to understand in order to communicate with those involved in the design, development and use of informatics in the organization.*
  - IO Explain the concept of interface as it relates to various informatics tools within an organization.*
  - IO Explain the use of standards in the evolution of informatics tools.*
  - IO Explain how the introduction of a new informatics tool affects policies and procedures.*

Approved by the Commission on Credentialing of the American Society of Health-System Pharmacists March 11, 2007. Endorsed by the ASHP Board of Directors April 18, 2007. This document is a revision of a set of educational outcomes, goals and objectives approved by the Commission on Credentialing of the American Society of Health-System Pharmacists August 20, 2005 and endorsed by the ASHP Board of Directors September 23, 2005. This earlier version developed by an ASHP working group comprised residency program directors, preceptors, and ASHP staff: Frank E. Briggs, Pharm.D., Assistant Director of Pharmacy, West Virginia University Hospitals; Mary M. Hess, Pharm.D., Clinical Coordinator, Greenville Hospital System; Carolyn G. Kowalchik, R.Ph., M.S., Director, Pharmacy Practice Residency Program, University of Utah Hospitals and Clinics; Bruce A. Nelson, R.Ph., M.S., Operations Director, Accreditation Services Division, ASHP; and Christine M. Nimmo, Ph.D., Standards Development and Training Director, Accreditation Services Division, ASHP.

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2<sup>nd</sup> Edition: The effective date for implementing these changes will be concurrent with the class of residents entering programs in July 2008.

This document supersedes the required and elective educational outcomes, goals and objectives for postgraduate year one (PGY1) pharmacy residencies approved by the COC in August 2005, and endorsed by ASHP Board of Directors September 2005.

## Glossary

Adverse drug event (ADE) -- an injury from a medicine (or lack of an intended medicine). (ASHP. Suggested definitions and relationships among medication misadventures, medication errors, adverse drug events, and adverse drug reactions. *AJHP*, 1998; 55:165-6.)

Culture -- an integrated system of learned behavior patterns that are characteristic of the members of any particular group. It is more than race or ethnicity. Culture includes race or customs, rituals, food, religion, and music; and, in addition, it includes health beliefs and practices, death and birth rituals, structure, and dynamics, social practices and beliefs that define personal space, eye contact, time orientation, and nonverbal communication behaviors. (Randall-David E. Culturally competent HIV counseling and education. Material & Child Health Clearinghouse: McLean, VA: 1994)

Cultural competency -- is more than cultural awareness or cultural sensitivity, competency implies skills and expertise to work with and within diverse cultural groups with sensitivity and effectiveness. In its most developed meaning cultural competence includes advocacy. (Randall-David E. Culturally competent HIV counseling and education. Material & Child Health Clearinghouse: McLean, VA: 1994)

Evidence-based medicine -- the integration of best research evidence, clinical expertise, and patient values in making decisions about the care of individual patients (Institute of medicine, 2001; Straus and Sackett, 1998). *Best research evidence* includes evidence that can be quantified, such as that from randomized controlled trials, laboratory experiments, clinical trials, epidemiological research, and outcomes research and evidence derived from the practice knowledge of experts, including inductive reasoning (Guyatt et al., Higgs et al., 2001). *Clinical expertise* is derived from the knowledge and experience developed over time from practice, including inductive reasoning. *Patient values and circumstances* are the unique preferences, concerns, expectations, financial resources, and social supports that are brought by each patient to a clinical encounter. (Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2001.)

Interdisciplinary team -- a team composed of members from different professions and occupations with varied and specialized knowledge, skills, and methods. The team members integrate their observations, bodies of expertise, and spheres of decision making to coordinate, collaborate, and communicate with one another in order to optimize care for a patient or group of patients. (Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2001.)

Leadership -- leadership practices include scanning, focusing, aligning/mobilizing, and inspiring.

Scanning:

- ✓ Identify client and stakeholder needs and priorities.
- ✓ Recognize trends, opportunities, and risks.
- ✓ Look for best practices.
- ✓ Identify staff capacities and constraints.
- ✓ Know yourself, your staff, and your organization – values, strengths, and weaknesses.

Focusing:

- ✓ Articulate the organizations' mission and strategy.
- ✓ Identify critical challenges.
- ✓ Link goals with the overall organizational strategy.
- ✓ Determine key priorities for action
- ✓ Create a common picture of desired results.

Aligning/Mobilizing:

- ✓ Ensure congruence of values, mission, strategy, structure, systems and daily actions.
- ✓ Facilitate teamwork.
- ✓ Unite key stakeholders around an inspiring vision.
- ✓ Link goals with rewards and recognition.
- ✓ Enlist stakeholders to commit resources.

Inspiring:

- ✓ Match deeds to words.
- ✓ Demonstrate honesty in interactions.
- ✓ Show trust and confidence in staff, acknowledge the contributions of others.
- ✓ Provide staff with challenges, feedback and support.
- ✓ Be a model of creativity, innovation, and learning

(Management and Leadership Program. Leading and managing framework. Management Sciences for Health, Ballston, VA. 2004.)

Management -- management practices include planning, organizing, implementing, and monitoring and evaluating.

Planning:

- ✓ Set short-term organizational goals and performance objectives.
- ✓ Develop multi-year and annual plans
- ✓ Allocate adequate resources (money, people, and materials).
- ✓ Anticipate and reduce risks.

Organizing:

- ✓ Ensure a structure that provides accountability and delineates authority.
- ✓ Ensure that systems for human resource management, finance, logistics, quality assurance, operations, information, and marketing effectively support the plan.
- ✓ Strengthen work processes to implement the plan.
- ✓ Align staff capacities with planned activities.

Implementing:

- ✓ Integrate systems and coordinate work flow.
- ✓ Balance competing demands.

- ✓ Routinely use data for decision making.
- ✓ Coordinate activities with programs and sectors.
- ✓ Adjust plans and resources as circumstances change.

Monitoring and Evaluating:

- ✓ Monitor and reflect on progress against plans.
- ✓ Provide feedback.
- ✓ Identify needed changes
- ✓ Improve work processes, procedures, and tools.

(Management and Leadership Program. Leading and managing framework. Management Sciences for Health, Ballston, VA. 2004.)

Medical informatics -- the development and application of information technology systems to problems in health care, research, and education. (Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2001.)

Medication-use system - Medication use is a complex process that comprises the sub-processes of medication prescribing, order processing, dispensing, administration, and effects monitoring. The key elements that most often affect the medication use process...are...., patient information; drug information, communication of drug information; drug labeling, packaging and nomenclature; drug storage, stock and standardization; drug device acquisition, use and monitoring; environmental factors; competency and staff education; patient education; and quality processes and risk management. (Institute of Safe Medication Practices web site accessed May 31, 2005 [http://www.ismp.org/Pages/ismp\\_faq.html#Question%207](http://www.ismp.org/Pages/ismp_faq.html#Question%207).)

Patient-centered care -- identify, respect, and care about patients' differences, values, preferences, and expressed needs; relieve pain and suffering; coordinate continuous care; listen to, clearly inform, communicate with, and educate patients; share decision making and management; and continuously advocate disease prevention, wellness, and promotion of healthy lifestyles, including a focus on population health. (Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2001.)

Pharmacy practice research – includes all forms of scholarly scientific inquiry that may be performed by pharmacy residents. Broad in scope, it may include prospective or retrospective clinical studies, pharmacokinetic or pharmacodynamic studies, outcome studies, or evaluation of some aspect of pharmacy practice (e.g., impact of a new program or service). Typically, research projects should be applied in nature, using human data, but exceptions may occur.

Professional -- the active demonstration of the 10 traits of a professional.

1. Knowledge and skills of a profession.
2. Commitment to self-improvement of skills and knowledge.
3. Service orientation.
4. Pride in the profession.
5. Covenantal relationship with the client.

6. Creativity and innovation.
7. Conscience and trustworthiness.
8. Accountability for his/her work.
9. Ethically sound decision making.
10. Leadership.

(Ten marks of a professional working smart. New York, NY: National Institute of Business Management, March 11, 1991;17[5].).

Quality -- the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. (Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2001.)

Quality improvement -- identify errors and hazards in care; understand and implement basic safety design principles, such as standardization and simplification; continually understand and measure quality of care in terms of structure, process, and outcomes in relation to patient and community needs; and design and test interventions to change processes and systems of care, with the objective of improving quality.” (Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2001.)