



CHOC Children's
Department of Pharmacy Services

Post Graduate Year One Residency Program
Residency Handbook

Revised: June, 2014

THE HOSPITAL

For more than 45 years, CHOC Children's has been steadfastly committed to providing the highest quality medical care to children. Affiliated with the University of California, Irvine, our regional pediatric healthcare network includes a state-of-the-art 279-bed main hospital facility in the City of Orange, and a hospital-within-a-hospital in Mission Viejo. CHOC also offers many primary and specialty care clinics, more than 100 additional programs and services, a pediatric residency program, and four centers of excellence - The CHOC Children's Heart, Neuroscience, Orthopaedic and Hyundai Cancer Institutes. Named one of the best children's hospitals by *U.S. News & World Report*, CHOC earned the Gold Level CAPE Award from the California Council of Excellence, the only children's hospital in California to ever earn this distinction, and was awarded Magnet designation, the highest honor bestowed to hospitals for nursing excellence. Recognized for extraordinary commitment to high-quality critical care standards, CHOC is the first children's hospital in the United States to earn the Beacon Award for Critical Care Excellence.

HOSPITAL MISSION STATEMENT

To nurture, advance and protect the health and well-being of children.

HOSPITAL VALUES

Excellence

Setting and achieving the highest standards

Innovation

Advancing care through new ideas and technology

Service

Understanding and exceeding customer expectations

Collaboration

Working together to achieve our mission

Compassion

Caring with sensitivity and respect

PHARMACY DEPARTMENT

The Department of Pharmacy Services provides pharmaceutical care through decentralized teams of staff pharmacists and technicians to meet the needs of patients and health care professionals. The Department maintains state-of-the-art inpatient pharmacies and a clinic pharmacy. Pharmacy personnel consist of 25 clinical pharmacists, 2 informatics pharmacists, 1 informatics technician, 31

pharmacy technicians, a pharmacy buyer, technician supervisor, administrative assistant, clinical educator, safety & quality coordinator and 4 administrative pharmacists.

Our clinical pharmacists are highly trained in pediatric pharmacotherapy and specialize in the following areas:

- Cardiac Intensive Care
- Neonatal Intensive Care
- Pediatric Intensive Care
- Infectious Diseases
- Oncology/Bone Marrow Transplantation
- Emergency Medicine

The Department of Pharmacy Services, through our pediatric specialists, provides a full complement of clinical services including:

- Drug information
- Pharmacokinetic monitoring
- 24 hours a day, 7 days a week, 365 days a year pharmaceutical services
- Medication policy development
- Investigational drug program
- Professional staff development

In addition, our specialists are integral members of multidisciplinary committees, such as the Medication Nutrition Committee, Medication Safety Committee, Antimicrobial Stewardship Committee, Investigational Review Board and various Continuous Quality Improvement Committees.

PHARMACY DEPARTMENT MISSION AND PRIMARY FUNCTION

The Department of Pharmacy Services of Children's Hospital of Orange County is dedicated to providing the highest quality of pharmaceutical services, integrating dispensing and clinical activities directed toward providing excellence in patient care and the advancement of education and research.

In collaboration with physicians and other allied health-care providers, promote health throughout the patient care continuum by ensuring the optimal and cost-effective use of medications.

Exercise leadership in all institutional matters related to the use of drugs.

In cooperation with physicians and other allied health care providers, actively promote programs that enhance knowledge of the optimal use of medications and support the concept of patient-focused, outcome oriented, pharmaceutical care.

Commitment to basic and clinical research activities dedicated to the advancement of pediatric treatment modalities or delivery systems through the support or initiation of institutional research activities.

RESIDENCY STATEMENT OF PURPOSE

The purpose of the PGY-1 Residency at Children's Hospital of Orange County is to cultivate future leaders in pediatric pharmacy practice. Pharmacists completing this residency will master the principles of pharmacotherapy and be competent and confident practitioners capable of providing direct patient care in various subspecialties. They will understand the principles of a sound pediatric pharmacy operational system and be able to integrate these principles into their clinical practice. These pharmacists will be skilled in educating other health care professionals, patients, and the community on medication-related issues and will be capable of conducting basic clinical research to answer medication-related questions. They will demonstrate professional maturity by following a personal philosophy of practice, monitoring their own performance, exhibiting commitment to the profession, and exercising leadership in improving the safety of the medication-use system.

DESCRIPTION OF THE PGY-1 RESIDENCY

The PGY-1 Residency Program is a one-year training program generally lasting from the 3rd week of June through June 30th of the following year. The residency program is fully accredited by the American Society of Health-System Pharmacists (ASHP). A Certificate for completion of the PGY-1 Program will be conferred to the resident at the completion of the program requirements.

The Clinical Pharmacy Manager serves as the Director of the Residency Program. Twelve other Clinical Pharmacists serve as mentors and preceptors to the resident in their respective practice areas.

The residency is designed to foster clinical expertise in pediatric pharmacotherapeutics, an understanding of the practical and administrative considerations of providing pharmaceutical care to pediatric patients and experience in teaching as well as clinical research. The resident will function as an active member of various multidisciplinary pediatric teams. He or she will be able to tailor the learning experiences to best meet his or her professional goals. The residency program consists of nine months of required rotations and three months of elective rotations.

Required rotations include (1 month):

- Decentralized pharmacy training/Orientation
- Drug Information/Pharmacokinetics
- General Pediatrics
- Neonatal Intensive Care
- Pediatric Intensive Care

- Pharmacy Administration
- Infectious Diseases
- Oncology

Longitudinal Experiences (6 – 12 months):

- Breathmobile Clinic – twice a month for 12 months
- Ketogenic Diet Clinic – once a month for 12 months
- Student Preceptorship
- Pharmacy Staffing

Elective rotations include:

- Cardiovascular Intensive Care
- Oncology Intensive Care
- Investigation Drug Service
- Emergency Medicine
- Other pediatric subspecialties

Additional experiences include participation in drug utilization evaluations, formulary management, multidisciplinary committees, and staff development.

RESIDENCY DIRECTOR

Allison Jun, Pharm.D., Clinical Pharmacy Manager
 Graduated from the University of California, San Francisco and completed a Pharmacy Practice Residency at the University of California, Los Angeles Medical Center

RESIDENCY PRECEPTORS

Shannon Bertagnoli, Pharm.D., Medication Safety & Quality Coordinator
 Graduated from University of Connecticut School of Pharmacy and completed a PGY 1 Pharmacy Practice Residency at Children’s Hospital of Orange County

Maximillian Jahng, Pharm.D., BCPS, Infectious Diseases Clinical Specialist
 Graduated from Western University of Health Sciences, completed a PGY 1 Pharmacy Practice Residency at Long Beach Memorial/Miller Children’s Hospital and PGY 2 Infectious Diseases Residency at VA San Diego Healthcare System

Allison Jun, Pharm.D., Clinical Pharmacy Manager & Clinical Specialist in Neonatology
Graduated from the University of California, San Francisco and completed a Pharmacy Practice Residency at the University of California, Los Angeles Medical Center

Grace Lee, Pharm.D., BCPS, Clinical Educator & Clinical Specialist in Neurology
Graduated from the University of California, San Francisco and completed a Pharmacy Practice Residency at the University of Washington Medical Center

Tina Lee, Pharm.D., Clinical Specialist in Neonatology
Graduated from Western State University of Health Sciences and completed a Pediatric Specialty Residency at Lucille Packard Medical Center

Grace Magedman, Pharm.D., Director of Pharmacy
Graduated from the University of California, San Francisco

Peter Nguyen, Pharm.D., Clinical Specialist in Pediatric Intensive Care and Cardiovascular Intensive Care
Graduated from the University of California, San Francisco and completed a Pharmacy Practice Residency at the University of California, Irvine Medical Center

Theresa Nguyen, Pharm.D., Clinical Specialist in Oncology/Bone Marrow Transplantation
Graduated from the University of the Pacific

RESIDENTS SALARY AND BENEFITS

- \$41,500 per year stipend
- 26 days per year Paid Time Off (PTO) which include vacation, holidays and sick days (some of this time will be used as comp. days for working weekends)
- As a full time employee, the resident will receive the hospital benefits program which includes medical, dental, vision, prescription, short term disability, long term disability, life insurance, medical and dependent care reimbursement accounts, 403B plans.

RESIDENCY TRAVEL

CSHP Seminar

The resident is expected to attend the CSHP Seminar in October of each year. The Department of Pharmacy will provide a stipend toward the cost of attending the meeting. The resident will participate in the recruitment of future residency candidates.

ASHP Midyear Clinical Meeting

The resident is expected to attend the ASHP Midyear Clinical Meeting in December of each year. The Department of Pharmacy will provide a stipend toward the cost of attending the meeting. In exchange, the resident will have responsibilities at the Midyear including, but not limited to recruiting future residency candidates, staffing at the residency showcase, and interviewing candidates.

Western States Residency Conference

The resident is expected to attend and present his/her residency project at the Western States Residency Conference, usually held at the end of May in Asilomar, California. The Department of Pharmacy will be responsible for the cost of attending this conference.

RESIDENTS RESPONSIBILITIES

Staffing

The resident is required to staff an average of two weekend days per month.

Residency Project

Each resident is required to complete a residency project. The project must be presented at the Western States Residency Conference and should be of benefit to CHOC Children's Department of Pharmacy Services. Each resident must have a residency preceptor to act as a mentor for the project. The Residency Director must approve the project prior to commencing.

The residency project must follow a timetable agreed upon by both the resident and the mentor. Sufficient data must be collected at the time the project is presented at the Western States Residency Conference. In addition, the project must be written up in publishable format upon completion of the residency. Should the resident fail to complete the project prior to the completion of the residency, the Residency Certificate will be withheld for up to six months to allow for additional time for completion of the project. A Residency Certificate will not be awarded if the resident fails to complete the Residency Project after the 6-month extension period.

Drug Use Evaluation/Formulary Monographs/Adverse Drug Reaction Reporting

Each resident must complete a minimum of one drug use evaluation (DUE), one drug monograph for formulary addition, and actively participate in the reporting of adverse drug reactions.

Presentations

- Each resident is required to present a patient case or topic discussion at the end of each rotation as assigned.
- Each resident must present his/her residency project to the pharmacy staff prior to the Western States Residency Conference.

- Each resident must present a staff development module to the pharmacy staff prior to completion of the residency

Teaching

CHOC Children's Department of Pharmacy Services offers a General Pediatric rotation for pharmacy students from the University of California, San Francisco Western University of Health Sciences, Loma Linda University and University of California, San Diego. The resident is expected to participate in the preceptorship of these students to refine his/her teaching skills.

The pharmacy staff also participates in a pediatric elective at LLU School of Pharmacy as lecturers. The residents are required to participate in lectures and facilitate case discussions.

Rotations

Upon completion of the staffing and clinical training, each resident will complete 7 required clinical rotations and 3 elective rotations. These rotations are all one month in duration. In addition, each resident will have longitudinal experiences at the Breathmobile Clinic and the Ketogenic Diet Clinic. Each resident will attend clinic twice a month for approximately twelve months. The resident will participate in the ketogenic diet clinic and program throughout the year which includes participation in the monthly clinic as well as managing any inpatient ketogenic diet needs in regards to medication. The resident will also be exposed to the investigational drug services throughout the year, learning the different aspects of pharmacy participation in clinical research.

Evaluations

The resident is expected to become familiar with Resitrak during orientation. During each rotation, the resident will receive two types of evaluations by his/her preceptor, formative evaluations and a summative evaluation. The formative evaluations are also referred to as "snapshots". The purpose of a snapshot is to evaluate a specific objective at one particular time. The snapshots help both the preceptor and the resident assess his/her handling of a specific situation and helps the resident shape his/her performance. The summative evaluation will occur at the end of the rotation and will assess the resident's progress in meeting the residency goals and objectives.

The summative evaluation is considered the "final grade" of the rotation. The rotation will be graded on a pass/fail basis. Should the resident fail the rotation or not complete the rotation, the rotation must be repeated. Failure of a required rotation twice may lead to dismissal from the Residency Program.

The resident will also complete two evaluations at the end of each rotation, a self-evaluation and an evaluation of the preceptor and the rotation.

The Residency Director will also conduct a quarterly evaluation. The purpose of the quarterly evaluation is to keep the resident on track with his/her residency goals and objectives and assigned/required projects.

Residency Meetings

Residents are required to attend any scheduled Staff Meetings/Huddles. In addition, monthly CORE (Council on Residency Excellence) meetings are scheduled to discuss various therapeutic and/or administrative issues with the residency program. The residents will be required to attend all established meetings.

Resident's Notebook

Each resident is expected to maintain a Resident's Notebook. The notebook should contain copies of all completed projects and presentations as well as evaluations. The resident may also include additional information if desired.

Resitrak

All rotation descriptions and evaluations are available through the Resitrak system. The residency director, coordinator, resident and preceptors will utilize Resitrak to track the resident's progress throughout the residency year.

Residency Certificate

The resident will be awarded a Residency Certificate upon successful completion of the following requirements of the residency:

- Follow the hospital and departmental policies and procedures
- Successful completion of all required and elective rotations
- Completion of a minimum of one formulary monograph
- Completion of a minimum of one drug use evaluation
- Completion of a Residency Project and preparation of a manuscript in publishable format
- Presentation of the Residency Project at the Western States Residency Conference

ASHP ACCREDITATION STANDARD FOR POSTGRADUATE YEAR ONE (PGY1) PHARMACY RESIDENCY PROGRAMS

Part I - Introduction

Definition: Postgraduate year one of pharmacy residency training is an organized, directed, accredited program that builds upon knowledge, skills, attitudes, and abilities gained from an accredited professional pharmacy degree program. The first-year residency program enhances general competencies in managing medication-use systems and supports optimal medication therapy outcomes for patients with a broad range of disease states.

Purpose of this Standard: The ASHP Accreditation Standard for Postgraduate Year One (PGY1) Pharmacy Residency Programs (hereinafter the Standard) establishes criteria for systematic training of pharmacists for the purpose of achieving professional competence in the delivery of patient-centered care and in pharmacy operational services. Its contents delineate the requirements for ASHP-accreditation of PGY1 residencies that build upon the educational foundation provided through completion of an accredited Doctor of Pharmacy degree program. Completion of a PGY1 residency serves as the prerequisite for postgraduate year two (PGY2) residencies and fellowships.

Purpose of PGY1 Residencies: Residents in PGY1 residency programs are provided the opportunity to accelerate their growth beyond entry-level professional competence in patient-centered care and in pharmacy operational services, and to further the development of leadership skills that can be applied in any position and in any practice setting. PGY1 residents acquire substantial knowledge required for skillful problem solving, refine their problem-solving strategies, strengthen their professional values and attitudes, and advance the growth of their clinical judgment. The instructional emphasis is on the progressive development of clinical judgment, a process begun in the advanced pharmacy practice experiences (APPE or clerkships) of the professional school years but requiring further extensive practice, self-reflection, and shaping of decision-making skills fostered by feedback on performance. The residency year provides a fertile environment for accelerating growth beyond entry-level professional competence through supervised practice under the guidance of model practitioners. Specifically, residents will be held responsible and accountable for acquiring these outcome competencies: managing and improving the medication-use process; providing evidence-based, patient-centered medication therapy management with interdisciplinary teams; exercising leadership and practice management; demonstrating project management skills; providing medication and practice-related education/training; and utilizing medical informatics.

Organization and Application of the Standard: Seven guiding principles provide the framework for the Standard. Each principle is restated at the beginning of the applicable segment of the Standard that outlines the specific requirements

corresponding to the principle. The requirements serve as the basis for evaluating a residency program for accreditation and are followed by an interpretive narrative for those requirements needing more explanation. Throughout the Standard use of the auxiliary verbs will and must implies an absolute requirement, whereas use of should and may denotes a recommended guideline.

The Standard sets forth the criteria used in the evaluation of practice sites that apply for accreditation. The accreditation program is conducted under the authority of the ASHP Board of Directors and is supported through formal partnerships with several other pharmacy practice associations. The ASHP

Regulations on Accreditation of Pharmacy Residencies¹ sets forth the policies governing the accreditation program and describes the procedures for seeking accreditation.

Part II - Overview of the Principles of PGY1 Pharmacy Residencies

Principle 1: The resident will be a pharmacist committed to attaining professional competence beyond entry-level practice.

Principle 2: The pharmacy residency program will provide an exemplary environment conducive to resident learning.

Principle 3: The resident will be committed to attaining the program's educational goals and objectives and will support the organization's mission and values.

Principle 4: The resident's training will be designed, conducted, and evaluated using a systems-based approach.

Principle 5: The residency program director (RPD) and preceptors will be professionally and educationally qualified pharmacists who are committed to providing effective training of residents.

Principle 6: The organization conducting the residency will meet accreditation standards, regulatory requirements, and other nationally applicable standards and will have sufficient resources to achieve the purposes of the residency program.

Principle 7: The pharmacy will be organized effectively and will deliver comprehensive, safe, and effective services.

Part III - Interpretation of the Principles

Principle 1: Qualifications of the Resident (The resident will be a pharmacist committed to attaining professional competence beyond entry-level practice.)

Requirement:

1.1 Residency applicant qualifications will be evaluated by the residency program director (RPD) through an established, formal procedure that includes an assessment of the applicant's ability to achieve the educational goals and objectives selected for the program. Further, the criteria used to evaluate applicants must be documented and understood by all involved in the evaluation and ranking process.

Interpretation of Requirement 1.1: A formal, criteria-based process to evaluate and rank program applicants must be in place. Possible criteria should include,

but might not be limited to: assessment of the applicant's academic performance; attainment of appropriate knowledge, skills, attitudes, and abilities needed to achieve the stated educational goals and objectives selected for the residency program; and, letters of recommendation from faculty and employers. On-site personal interviews should be conducted. Ultimately, it is the responsibility of the RPD to assess the applicant's baseline knowledge, skills, attitudes, and abilities to determine that the applicant has met the qualifications for admission to the residency program.

1.2 The resident should be a graduate of an Accreditation Council for Pharmacy Education (ACPE)-accredited Doctor of Pharmacy degree program.

Interpretation of Requirement 1.2: For PGY1 pharmacy residencies it is clear that the Doctor of Pharmacy degree provides the applicant with the level of knowledge, skills, attitudes and abilities needed to meet program requirements. However, it is permissible to accept applicants who have graduated from ACPE-accredited Bachelor of Science (B.S.) in pharmacy degree programs.

1.3 The applicant must be licensed, or be eligible for licensure, in the state or jurisdiction in which the residency program is conducted. Consequences of failure to obtain appropriate licensure must be addressed as a policy issue by the organization conducting the residency.

Interpretation of Requirement 1.3: Since residency training is predicated upon accepting full responsibility and accountability for the care of patients, residents must obtain licensure to practice as a pharmacist, consistent with the requirements for pharmacists within the organization conducting the residency. Therefore, licensure must be obtained either prior to beginning the residency program or very soon afterwards.

1.4 Residents making application to residency programs that have applied for accreditation or that are accredited by ASHP must participate in and adhere to the rules of the Resident Matching Program (RMP) process

Principle 2: Obligations of the Program to the Resident (The pharmacy residency program will provide an exemplary environment conducive to resident learning.)

Requirements:

2.1 Programs must be a minimum of twelve months and a full-time practice commitment or equivalent.

2.2 The residency program director (RPD) must ensure that neither the educational outcomes of the program nor the welfare of the resident or the welfare of patients are compromised by excessive reliance on residents to fulfill service obligations. Providing residents with a sound academic and clinical education must be planned and balanced with concerns for patient safety and resident well-being. Programs must comply with the current duty hour standards of the Accreditation Council for Graduate Medical Education (ACGME) .²

2.3 ASHP-accredited, provisionally accredited, and application-submitted residency programs must adhere to the rules of the Resident Matching Program (RMP).

2.4 The RPD must provide residents who are accepted into the program with a letter outlining their acceptance to the program. Information on the terms and conditions of the appointment must also be provided in a manner consistent with that provided to pharmacists within the organization conducting the residency. Acceptance by residents of these terms and conditions must be documented prior to the beginning of the residency.

2.5 The residency program must provide a sufficient complement of professional and technical pharmacy staff to ensure appropriate supervision and preceptor guidance to all residents.

2.6 The residency program must provide residents an area in which to work, access to appropriate technology, access to extramural educational opportunities (e.g., Midyear Clinical Meeting, other pharmacy association meetings, a regional residency conference), and sufficient financial support to fulfill the responsibilities of the program.

2.7 Policies concerning professional, family, and sick leave and the effect such leaves would have on the resident's ability to complete the residency program must be documented.

2.8 The RPD will award a certificate of residency to those who complete the program. Reference must be made in the residency certificate that the program is accredited by ASHP and, if appropriate, its corresponding partner. The certificate must be issued in accordance with the provisions of the ASHP Regulations on

Accreditation of Pharmacy Residencies¹ and signed by the RPD and the chief executive officer of the organization. A certificate must not be issued to anyone who does not complete the program's requirements.

Interpretation of Requirement 2.8: For large corporate entities in which it is impractical to involve the chief executive officer in signing residency certificates, it is the intent of this requirement that an appropriate executive with ultimate authority over the residency join the RPD in signing the certificate of residency.

2.9 The RPD must ensure the program's compliance with the provisions of the current version of the ASHP Regulations on Accreditation of Pharmacy Residencies¹.

Principle 3: Obligations of the Resident to the Program (The resident will be committed to attaining the program's educational goals and objectives and will support the organization's mission and values.)

Requirements:

3.1 Residents' primary professional commitment must be to the residency program.

Interpretation of Requirement 3.1: A residency is a full-time obligation. Residents must manage their activities, external to the residency, so as not to interfere with the program defined in this Standard. It is permissible to admit on a part-time basis a resident who is employed by the residency site, another employer, or enrolled concurrently in a degree program, provided a clear distinction can be made between employment or academic responsibilities and the requirements of the residency. ASHP assumes no authority for evaluation of an academic program taken concurrently with a residency program. In any case, residents are

responsible for making any changes necessary to meet the requirements for successful completion of the residency.

3.2 Residents must be committed to the values and mission of the organization conducting the residency program.

3.3 Residents must be committed to completing the educational goals and objectives established for the program.

3.4 Residents must seek constructive verbal and documented feedback that directs their learning.

3.5 Residents must be committed to making active use of the constructive feedback provided by residency program preceptors.

Principle 4: Requirements for the Design and Conduct of the Residency Program

(The resident's training will be designed, conducted, and evaluated using a systems-based approach.)

To ensure training efficiency and effectiveness, the program must use a systems-based approach to training design, delivery, and evaluation. Such an approach requires that there be a direct correlation among the expectations of resident performance, the type of instruction provided, and the evaluation of resident performance. The requirements in Principle 4 specify the products of a systems-based approach that may be examined during an onsite accreditation survey but, beyond specifying broad RPD and preceptor participation in program decisions do not specify a particular process for producing these products. RPDs are free to develop their own systems-based approach to training or rely on the guidance and tools in the ASHP-endorsed Residency Learning System (RLS) and associated materials.^{3,4}

Requirements:

4.1 Program Design. The RPD and, when applicable, program preceptors will collaborate to design the residency program. The resulting design will include the following elements:

- a. The program will document its purpose (the type of practice for which the residents are to be prepared); its outcomes (the residency graduates' capabilities); its educational goals (broad, sweeping statements of abilities); and educational objectives (observable, measurable statements of resident performance, the sum of which ensure achievement of the educational goal) for each educational goal. The program's purpose will be reflected in the program's choice of outcomes. For each outcome there must be goals that further explain the capabilities specified by the outcome. For each goal there must be a set of educational objectives that specifies the resident performance to be measured.
- b. Programs must select all outcomes required by this standard. The required outcomes are as follows:

- (1) Manage and improve the medication-use process.
- (2) Provide evidence-based, patient-centered medication therapy management with interdisciplinary teams.
- (3) Exercise leadership and practice management skills.
- (4) Demonstrate project management skills.
- (5) Provide medication and practice-related education/training.
- (6) Utilize medical informatics.

Programs must include all of the associated educational goals and educational objectives listed with these outcomes. The list of outcomes with their educational goals and educational objectives is published elsewhere. Programs may establish additional program outcomes with associated educational goals that emphasize program strengths. The same reference includes some potential additional (elective) program outcomes with associated educational goals and educational objectives.

Interpretation of Requirement 4.1.b: The published Residency Learning System (RLS) lists of outcomes, educational goals, and educational objectives also include instructional objectives to assist, when needed, in teaching. Instructional objectives are not required and are not meant to be evaluated.

- c. The program will create a structure (the designation of types, lengths, and sequence of learning experiences) that facilitates achievement of the program's educational goals and objectives. The structure must permit residents to gain experience in diverse patient populations, a variety of disease states, and a range of complexity of patient problems as characterized by a generalist's practice. Residency programs that are based in certain practice settings (e.g., acute care,

ambulatory care, hospice, primary care, geriatrics, pediatrics) must ensure that the program's learning experiences meet the above requirements for diversity, variety, and complexity. No more than one-third of the twelve-month PGY1 pharmacy residency program may deal with a specific patient population or practice area (e.g., critical care, oncology, cardiology, drug information). The educational goals and objectives, including those for the project, will be assigned for teaching to a single learning experience or a sequence of learning experiences to allow sufficient practice for their achievement by residents. Programs may market the practice strengths they seek to develop as defined by their choice of program structure.

- d. Preceptors will create a description of their learning experience, and a list of activities to be performed by residents in the learning experience that demonstrates adequate opportunity to learn the educational goals and objectives assigned to the learning experience.
 - e. The program will create a competency-based approach to evaluation of resident performance of the program's educational goals and objectives, resident self-assessment of their performance, and resident evaluation of preceptor performance and of the program. The strategy will be employed uniformly by all preceptors. This three-part, competency-based approach will include provisions for the following:
 - (1) Preceptors conduct and document a criteria-based, summative assessment of each resident's performance of each of the respective program-selected educational goals and objectives assigned to the learning experience. This evaluation must be conducted at the conclusion of the learning experience (or at least quarterly for longitudinal learning experiences), reflect the resident's performance at that time, and be discussed by the preceptor with the resident and RPD. The resident, preceptor, and RPD must document their review of the summative evaluations.
 - (2) Each preceptor provides periodic opportunities for the resident to practice and document criteria-based, formative self-evaluation of aspects of their routine performance and to document criteria-based, summative self-assessments of achievement of the educational goals and objectives assigned to the learning experience. The latter will be completed on the same schedule as required of the preceptor by the assessment strategy and will include an end-of-the-year component.
 - (3) Residents complete an evaluation of the preceptor and of the learning experience at the completion of each learning experience (or at least quarterly in longitudinal learning experiences.) Residents should discuss their evaluations with the preceptor and must provide their evaluations to the RPD.
- 4.2 Program Delivery. To achieve systems-based training the program's design must be implemented fully, with ongoing attention to fulfillment of both preceptor

and resident roles and responsibilities. In delivering the program the following must occur and be documented:

- a. The RPD and, when applicable, preceptors will conduct essential orientation activities. Residents will be oriented to the program to include its purpose, the applicable accreditation regulations and standards, designated learning experiences, and the evaluation strategy. When necessary, the RPD will orient staff to the residency program. Preceptors will orient residents to their learning experiences, including reviewing and providing written copies of the learning experience educational goals and objectives, associated learning activities, and evaluation strategies.
- b. The RPD and, when applicable, preceptors will customize the training program for the resident based upon an assessment of the resident's entering knowledge, skills, attitudes, and abilities and the resident's interests. Any discrepancies in assumed entering knowledge, skills, attitudes, or abilities will be accounted for in the resident's customized plan. Similarly, if a criteria-based assessment of the resident's performance of one or more of the required educational objectives is performed and judged to indicate full achievement of the objective(s), the program is encouraged to modify the resident's program accordingly. This would result in changes to both the resident's educational goals and objectives and to the schedule for assessment of resident performance. The resulting customized plan must maintain consistency with the program's stated purpose and outcomes. Customization to account for specific interests must not interfere with achievement of the program's educational goals and objectives. The customized plan and any modifications to it, including the resident's schedule, must be shared with the resident and all preceptors.
- c. Preceptors will provide ongoing, criteria-based verbal and, when needed, documented feedback on resident performance. Documented feedback will be used if there is limited direct contact with the preceptor (e.g., when non-pharmacist preceptors are utilized for learning experiences late in the residency) or verbal feedback alone is not effective in improving performance.
- d. Preceptors will ensure that all aspects of the program's plan for assessment of resident performance, preceptor performance, and resident self-evaluation are completed.
- e. RPDs and, when applicable, preceptors will establish a process for tracking residents' progress toward achievement of their educational goals and objectives. Overall progress toward achievement of the program's outcomes, through performance of the program's

educational goals and objectives, will be assessed at least quarterly, and any necessary adjustments to residents' customized plans, including remedial action(s), will be documented and implemented.

4.3 Program Evaluation and Improvement. Program evaluation and improvement activities will be directed at enhancing achievement of the program's choice of outcomes. RPDs will evaluate potential preceptors based on their desire to teach and their aptitude for teaching (as differentiated from formal didactic instruction) and provide preceptors with opportunities to enhance their teaching skills. Further, RPDs will devise and implement a plan for assessing and improving the quality of preceptor instruction including, but not limited to, consideration of the residents' documented evaluations of preceptor performance. At least annually, RPDs and, when applicable, preceptors will consider overall program changes based on evaluations, observations, and other information.

4.4 Tracking of Graduates: The RPD should evaluate whether the residency produces the type of practitioner described in the program's purpose statement. (Information tracked may include initial employment, changes in employment, board certification, etc.)

Principle 5: Qualifications of the Residency Program Director (RPD) and Preceptors (The RPD and preceptors will be professionally and educationally qualified pharmacists who are committed to providing effective training of residents.)

Requirements of the residency program director:

5.1 RPDs must be licensed pharmacists who have completed an ASHP-accredited residency and have a minimum of three years of pharmacy practice experience. Alternatively, the RPD may be a licensed pharmacist with five or more years of practice experience with demonstrated mastery of the knowledge, skills, attitudes, and abilities expected of one who has completed a residency.

5.2 RPDs serve as leaders of programs, responsible not only for precepting residents, but also for the evaluation and development of all other preceptors in their programs. Therefore, RPDs must have documented evidence of their own ability to teach effectively in the clinical practice environment (e.g., through student and/or resident evaluations).

5.3 Each residency program must have a single RPD who must be a pharmacist from a practice site involved in the program or from a sponsoring organization.

5.4 A single RPD must be designated for multiple-site residencies or for a residency offered by a sponsoring organization in cooperation with one or more practice sites. The responsibilities of the RPD must be defined clearly, including lines of accountability for the residency and to the

residency training site. Further, the designation of this individual to be RPD must be agreed to in writing by responsible representatives of each participating organization.

5.5 RPDs must have demonstrated their ability to direct and manage a pharmacy residency (e.g., previous involvement as a preceptor in an ASHP-accredited residency program, management experience, previous academic experience as a course coordinator).

5.6 RPDs must have a sustained record of contribution and commitment to pharmacy practice that must be characterized by a minimum of four of the following:

- a. Documented record of improvements in and contributions to pharmacy practice.
- b. Appointments to appropriate drug policy and other committees of the organization.
- c. Formal recognition by peers as a model practitioner (e.g., board certification, fellow status).
- d. A sustained record of contributing to the total body of knowledge in pharmacy practice through publications in professional journals and/or presentations at professional meetings.
- e. Serving regularly as a reviewer of contributed papers or manuscripts submitted for publication.
- f. Demonstrated leadership in advancing the profession of pharmacy through active service in professional organizations at the local, state, and national levels.
- g. Demonstrated effectiveness in teaching (e.g., through student and/or resident evaluations, teaching awards).

Requirements of preceptors: (The RPD should document criteria for pharmacists to be preceptors. The following requirements may be supplemented with other criteria.)

5.7 Preceptors must be licensed pharmacists who have completed an ASHP-accredited residency followed by a minimum of one year of pharmacy practice experience. Alternatively, licensed pharmacists who have not completed an ASHP-accredited residency may be preceptors but must demonstrate mastery of the knowledge, skills, attitudes, and abilities expected of one who has completed a PGY1 residency and have a minimum of three years of pharmacy practice experience.

5.8 Preceptors must have training and experience in the area of pharmacy practice for which they serve as preceptors, must maintain continuity-of-practice in that area, and must be practicing in that area at the time residents are being trained.

5.9 Preceptors must have a record of contribution and commitment to pharmacy practice characterized by a minimum of four of the following:

- a. Documented record of improvements in and contributions to the respective area of advanced pharmacy practice (e.g., implementation of a new service, active participation on a committee/task force resulting in practice improvement, development of treatment guidelines/protocols).
- b. Appointments to appropriate drug policy and other committees of the department/organization.
- c. Formal recognition by peers as a model practitioner (e.g., board certification, fellow status).
- d. A sustained record of contributing to the total body of knowledge in pharmacy practice through publications in professional journals and/or presentations at professional meetings.
- e. Serving regularly as a reviewer of contributed papers or manuscripts submitted for publication.
- f. Demonstrated leadership in advancing the profession of pharmacy through active participation in professional organizations at the local, state, and national levels.
- g. Demonstrated effectiveness in teaching (e.g., through student and/or resident evaluations, teaching awards).

5.10 Preceptors must demonstrate a desire and an aptitude for teaching that includes mastery of the four preceptor roles fulfilled when teaching clinical problem solving (instructing, modeling, coaching, and facilitating). Further, preceptors must demonstrate abilities to provide criteria-based feedback and evaluation of resident performance. Preceptors must continue to pursue refinement of their teaching skills.

5.11 To develop a resident's practice competency it is critical that learning experiences be supervised by pharmacist preceptors who model pharmacy practice skills and provide regular criteria-based feedback. However, in selected learning experiences in later stages of the residency, when the primary role of the preceptor is to facilitate resident learning experiences, it is permissible to use practitioners who are not pharmacists (e.g., physicians, physician assistants, and certified nurse practitioners) as preceptors. In these instances, a pharmacist must work closely with the non-pharmacist preceptor to select the educational goals and objectives as well as participate actively in the criteria-based evaluation of the resident's performance. Moreover, these learning experiences must be conducted only at a point in the residency when the RPD and preceptors agree that the resident is ready for independent practice. Evaluations conducted

at the end of previous learning experiences must reflect such readiness to practice independently.

Principle 6: Minimum Requirements of the Site Conducting the Residency Program

(The organization conducting the residency will meet accreditation standards, regulatory requirements, and other nationally applicable standards and will have sufficient resources to achieve the purposes of the program.)

Requirements:

6.1 As appropriate, residency programs must be conducted only in practice settings that have sought and accepted outside appraisal of facilities and patient care practices. The external appraisal must be conducted by a recognized organization appropriate to the practice setting.

a. A health-system (inclusive of all components of the system that provide patient care) that offers or that participates in offering a pharmacy residency must be accredited by applicable organizations [e.g., Joint Commission on Accreditation of Healthcare Organizations (JCAHO), American Osteopathic Association (AOA), National Committee for Quality Assurance (NCQA)].

b. A college of pharmacy that participates in offering a pharmacy residency must be accredited by the Accreditation Council for Pharmacy Education (ACPE).

c. Other practice settings that offer a pharmacy residency must have demonstrated substantial compliance with applicable professionally developed and nationally applied standards.

6.2 Residency programs must be conducted only in those practice settings where management and professional staff have committed to seek excellence in patient care, demonstrated substantial compliance with professionally developed and nationally applied practice and operational standards, and have sufficient resources to achieve the educational goals and objectives selected for the residency program.

6.3 Two or more practice sites, or a sponsoring organization (e.g., college of pharmacy, health system) working in cooperation with one or more practice sites, may provide a pharmacy residency.

a. Pharmacy residencies are dependent on the availability of a sufficient patient population base and professional practice experience to satisfy the requirements of the residency program.

b. Sponsoring organizations must maintain authority and responsibility for the quality of their residency programs.

- c. A mechanism must be established that designates and empowers an individual to be responsible for directing the residency program and for achieving consensus regarding the evaluation and ranking of applicants for the residency.
- d. Sponsoring organizations and practice sites must have contractual arrangement(s) or signed agreement(s) that define clearly the responsibilities for all aspects of the residency program.
- e. Each of the practice sites that provide residency training must meet the requirements set forth in Requirement 6.2 and the pharmacy's service requirements in Principle 7.

Interpretation of Requirement 6.3: Application for accreditation of a health-system or corporate-based, multiple-site pharmacy residency must be submitted in the name of the principal practice site (i.e., the practice site in which the majority of the residency program is centered).

In the case of a sponsoring organization (e.g., college of pharmacy, health system) that has a contractual arrangement with one or more practice settings to provide residency training, the application must be completed by the sponsoring organization.

The sponsoring organization, in making application for accreditation, must submit with the application the signed agreement(s) with the practice site(s) that define clearly the relationship, the governance, and the responsibility that will be borne by the organization and the practice site(s) for all aspects of the residency program.

Since the sponsoring organization may delegate day-to-day responsibility for the residency program to the practice site(s), the site(s) will be required to submit routine reports to the sponsoring organization. Some method of on-site inspection by a representative of the sponsoring organization must be in place to insure that the terms of the agreement are being met.

All reports and inspections must be documented and signed by representatives of all parties bound by the agreement and will be made available to the accreditation survey team.

Principle 7: Qualifications of the Pharmacy (The pharmacy will be organized effectively and will deliver comprehensive, safe, and effective services.)

The most current edition of the ASHP Best Practices for Health-System Pharmacy, available at www.ashp.org, (and, when necessary, other pharmacy association guides to professional practice that apply to specific practice sites) will be utilized in evaluating any patient care site(s) or other practice operation (e.g., drug information service) providing pharmacy residency training.

Requirements:

7.1 The pharmacy must be led and managed by a professionally competent, legally qualified pharmacist. This person is referred to in this accreditation

standard as the chief pharmacist and is responsible for insuring compliance with requirements for the pharmacy as outlined in this Principle.

7.2 The pharmacy must be an integral part of the health-care delivery system at the practice site in which the residency program is offered, as evidenced by the following:

- a. The scope of pharmacy services provided to patients at the practice site is based upon an assessment of pharmacy functions needed to provide care to all patients served by the practice site.
- b. The services are of a scope and quality commensurate with identified patient needs.
- c. The pharmacy is involved in the overall planning of patient care services for the practice setting.
- d. Pharmacy services extend to all areas of the practice site in which medications for patients are prescribed, dispensed, administered, and monitored.
- e. Pharmacists are responsible around-the-clock for the procurement, preparation, distribution, and control of all medications used, including those that are investigational.

7.3 The chief pharmacist must provide effective leadership and management for the achievement of short- and long-term goals of the pharmacy and the organization relating to medication use and medication-use policies. The chief pharmacist must ensure that the following elements associated with a well-managed pharmacy are in place (as appropriate to the practice setting):

- a. A pharmacy mission statement.
- b. A written document describing the scope and depth of pharmacy services.
- c. A well-defined pharmacy organizational structure.
- d. A description of pharmacy services provided.
- e. Documented short- and long-term pharmacy goals.
- f. Current policies and procedures that are readily available to staff participating in service provision.
- g. Position descriptions for all categories of pharmacy personnel.

- h. Systems to document pharmacy workload, financial performance, and patient care outcomes data.
- i. Pharmacy involvement with key committees involving medications and patient care.
- j. A quality improvement plan.

7.4 The pharmacy:

- a. Complies with all applicable federal, state, and local laws, codes, statutes, and regulations governing pharmacy practice.
- b. Demonstrates substantial compliance with national practice standards and guidelines.
- c. Regularly reviews and develops plans to conform to new practice standards or guidelines.
- d. Has sought and accepted outside appraisals of its facilities and patient care practices.

7.5 The pharmacy must provide a safe and effective drug distribution system for all medications used within the practice site. This system must include the following components (as applicable to the practice setting):

- a. A unit-dose drug distribution service.
- b. An intravenous admixture and sterile product service.
- c. An investigational drug service.
- d. An extemporaneous compounding service.
- e. A system for the safe use of drug samples.
- f. A system for the safe use of emergency medications.
- g. A controlled substance floor-stock system.
- h. A controlled floor-stock system.
- i. An outpatient drug distribution service.

7.6 The pharmacy must provide the necessary patient care services in a manner consistent with practice site and patient needs.

a. The following patient care services or activities must be provided in collaboration with other health-care professionals to optimize medication therapy for patients:

- (1) Membership on interdisciplinary teams in the patient care areas associated with the residency program.
- (2) Development of treatment protocols, critical pathways, order sets, and other systems approaches involving medications for patients on involved services.
- (3) Participation in collaborative practice agreements with other providers and management of patients following collaborative practice agreements, treatment protocols, critical pathways, etc.
- (4) Prospective participation in the development of individualized treatment plans for patients of involved services.
- (5) Identification of medication-related problems.
- (6) Review of the appropriateness and safety of medication orders.
- (7) Design and implementation of medication-therapy monitoring plans.
- (8) Documentation of all significant patient care recommendations and resulting actions, treatment plans, and/or progress notes in the appropriate section of the patient's medical record or the organization's clinical information system.
- (9) Written and oral consultations regarding medication-therapy selection and management.
- (10) Patient disease and/or medication management consistent with laws, regulations, and practice site policy.
- (11) Medication administration consistent with laws, regulations, and practice site policy.
- (12) Preventive and wellness programs.
- (13) A system to ensure and support continuity-of-care.

b. Essential drug information activities that must be provided by pharmacy staff and the residents include, but are not limited to, the following (as applicable to the practice setting):

- (1) Developing and maintaining a formulary.
- (2) Publishing periodic newsletters or bulletins for health-care providers on timely medication-related matters and medication policies.
- (3) Preparing medication therapy monographs based on an analytical review of pertinent biomedical literature, including a safety assessment and a comparative therapeutic and economic assessment of each new agent for formulary addition or deletion.
- (4) Establishing and maintaining a system for retrieving drug information from the literature.
- (5) Responding to drug information inquiries from health-care providers.
- (6) Conducting educational programs about medications, medication therapy, and other medication-related matters for health-care providers.

(7) Participating in the development or modification of policies related to: (a) medications; (b) medication-use evaluation; (c) adverse drug event prevention, monitoring, and reporting; and (d) appropriate methods to assess ongoing compliance with such policies.

7.7 The pharmacy must provide leadership and participate with other health professionals in the following systems to ensure safe and effective patient care outcomes and to continuously improve the medication-use system used by the practice site (as applicable to the practice setting):

- a. A system to support and actively participate in decision-making concerning the pharmacy and therapeutics function, including the preparation and presentation of drug-therapy monographs.
- b. A system to review medication-use evaluations and to implement new policies or procedures to improve the safe and effective use of medications.
- c. A system to review adverse drug event reports and to implement new policies and procedures to improve medication safety.
- d. A system to evaluate routinely the quality of pharmacy services provided.

7.8 The pharmacy must have personnel, facilities, and other resources to carry out a broad scope of pharmacy services (as applicable to the practice setting). The pharmacy's:

- a. Facilities are constructed, arranged, and equipped to promote safe and efficient work.
- b. Packaging equipment is adequate to prepare medications for unit-dose dispensing or compliance packaging.
- c. Automated medication systems and software support a safe medication-use system.
- d. Computerized systems support a safe medication-use system.
- e. Professional and technical staff is sufficient in number and of the diversity to ensure that the department can provide the level of service required by all patients served. In instances where resources limit the delivery of pharmacy services to all patients receiving medication therapy, mechanisms are in place to identify those patients who might benefit most from these services, and a plan is in place to work toward meeting these needs.

- f. Professional staff members seek professional enrichment and demonstrate their interest in continuing competence.
- g. Technical and clerical staff complement is sufficient to handle all functions that can be assigned appropriately to them.

GLOSSARY

Certification. A voluntary process by which a nongovernmental agency or an association grants recognition to an individual who has met certain predetermined qualifications specified by that organization. This formal recognition is granted to designate to the public that the individual has attained the requisite level of knowledge, skill, or experience in a well defined, often specialized, area of the total discipline. Certification usually requires initial assessment and periodic reassessments of the individual's qualifications.

Chief Pharmacist. The person who has ultimate responsibility for the residency practice site/pharmacy in which the residency program is conducted. (In some settings this person is referred to, for example, as the director of pharmacy, the pharmacist-in-charge, the chief of pharmacy services, etc.) In a multiple-site residency, a sponsoring organization must be identified to assume ultimate responsibility for coordinating and administering the program.

Customization. The process by which a residency's generic plan for training (program outcomes; educational goals; educational objectives; structure; learning activities; extent of modeling, coaching, and facilitation; and, assessment strategy for preceptor and self-evaluation) are modified to account for the strengths, weaknesses, and interests of the resident to help ensure that each resident's training is optimal.

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 Academy Press; 2001.)

Multiple-site residency. A residency site structure in which multiple organizations/practice sites are involved in the residency program. In a multiple-site residency, a sponsoring organization must be identified to assume ultimate responsibility for coordinating and administering the program.

Preceptor. An expert pharmacist who gives practical experience and training to a pharmacy resident.

Residency program director. The pharmacist responsible for direction, conduct, and oversight of the residency program.

Service commitments. Clinical and operational practice activities. May be defined in terms of the number of hours, types of activities, or a set of educational goals and objectives.

Single-site residency. A residency site structure in which the practice site assumes total responsibility for the residency program. In a single-site residency, the majority of the resident's training program occurs at the site; however, the resident may spend assigned time in short elective learning experiences off-site.

Site. The actual practice location where the residency experience occurs.

Sponsoring organization. The organization assuming ultimate responsibility for the coordination and administration of the residency program. The sponsoring organization is charged with ensuring that the resident experiences are educationally sound and are conducted in a quality practice environment. The sponsoring organization is also responsible for submitting the accreditation application and ensuring periodic evaluations are conducted. If several organizations share responsibility for the financial and management aspects of the residency (e.g., school of pharmacy, health-system, and individual site), the organizations must mutually designate one organization as the sponsoring organization.

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2. Institutional requirements; Accreditation Council for Graduate Medical Education; 2003. Accreditation Council for Graduate Medical Education [resource on World Wide Web]. <http://www.acgme.org>. Available from Internet. Accessed 2005 September 23.
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5. Required and elective educational outcomes, educational goals, and educational objectives. American Society of Health-System Pharmacists Home Page [resource on World Wide Web]. URL: <http://www.ashp.org>. Available from Internet. Accessed 2005 September 23.
6. Council on Credentialing in Pharmacy White Paper. Credentialing in Pharmacy; 2003. Council on Credentialing in Pharmacy Home Page [resource on World Wide Web]. URL: <http://www.pharmacycredentialing.org>. Available from Internet. Accessed 2005 September 23.
7. American Society of Health-System Pharmacists. 1999 ASHP National Residency Preceptors Conference: Mentoring for excellence. *Am J Health-Syst Pharm.* 1999; 56:2454-7. Approved by the ASHP Board of Directors September 23, 2005. Developed by the ASHP Commission on Credentialing. Supersedes the "ASHP Accreditation Standard for Residencies in Pharmacy Practice", approved April 25, 2001. For existing programs this revision of the accreditation standard takes effect January 1, 2007. Until that time the current standard, which was approved April 25, 2001, is in force.

Required and Elective Educational Outcomes, Goals, Objectives, and Instructional Objectives for Postgraduate Year One (PGY1) Pharmacy Residency Programs 2nd Edition – effective July 2008
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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.¹

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.

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.

Required By PGY1 Pharmacy Residency Accreditation Standard

¹ 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.

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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2nd 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.)

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.)