CHOC Children's

Department of Pharmacy Services

Post Graduate Year Two 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-2 Pediatric Specialty 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 pediatric pharmacotherapy and be competent and confident practitioners capable of providing direct patient care to pediatric patients. 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-2 RESIDENCY

The PGY-2 Residency Program is a one-year training program generally lasting from the 1st week of July through June 30th of the following year. The residency program is seeking accreditation by the American Society of Health-System Pharmacists (ASHP). A Certificate for completion of the PGY-2 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 seven months of required rotations and four to five months of elective rotations.

Required rotations include (1 month):

- Decentralized pharmacy training/Orientation
- General Pediatrics
- Neonatal Intensive Care
- Pediatric Intensive Care
- 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
- Investigation Drug Service
- Emergency Medicine
- Other pediatric subspecialties

Additional experiences include participation in didactic teaching, 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 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

- $45,000 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.

RESIDENT RESPONSIBLITIES

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.

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 a summative evaluation by the preceptor. 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 mid-point and 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 TWO (PGY2) PHARMACY RESIDENCY PROGRAMS

Part I - Introduction

Definition: Postgraduate year two of pharmacy residency training is an organized, directed, accredited program that builds upon the competencies established in postgraduate year one of residency training. The second-year residency program is focused in a specific area of practice. The PGY2 program increases the resident's depth of knowledge, skills, attitudes, and abilities to raise the resident's level of expertise in medication therapy management and clinical leadership in the area of focus. In those practice areas where board certification exists, graduates are prepared to pursue such certification.

Purpose of this Standard: The *ASHP Accreditation Standard for Postgraduate Year Two (PGY2) Pharmacy Residency Programs* (hereinafter the Standard) establishes criteria for systematic training of pharmacists in advanced areas of pharmacy practice. Its contents delineate the requirements for PGY2 residencies, which build upon the foundation provided through completion of an accredited Doctor of Pharmacy degree program and an accredited postgraduate year one (PGY1) residency program.

Purpose of PGY2 Residencies: PGY2 residency programs are designed to develop accountability; practice patterns; habits; and expert knowledge, skills, attitudes, and abilities in the respective advanced area of pharmacy practice. PGY2 residencies build upon the broad-based competencies achieved in a PGY1 residency, deepening the resident's ability to provide care in the most complex of cases or in the support of care through practice leadership. Therefore, PGY2 residencies provide residents with opportunities to function independently as practitioners by conceptualizing and integrating accumulated experience and knowledge and transforming both into improved medication therapy for patients. A resident who completes successfully an accredited PGY2 residency should possess competencies that enable attainment of board certification in the practice area, where board certification for the practice area exists.

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. PGY2 pharmacy residencies are offered in a variety of practice environments and may focus on specific patient populations or disease states. Therefore, a corresponding set of educational goals and objectives1 has been developed for

many of the practice settings and areas of practice (e.g., critical care, drug information, geriatrics, oncology, pharmacy practice management, primary care). Each takes into account the unique elements of the 2 practice site and the focused area of practice. To structure the residency, the program must use the set of educational goals and objectives that best corresponds to the practice site and the focused area of practice. These educational goals and objectives must be used with this Standard, and the appropriate selection and use of them will be evaluated in site surveys for accreditation.

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 Residencies*2 sets forth the policies governing the accreditation program and describes the procedures for seeking accreditation.

Part II - Overview of the Principles of PGY2 Pharmacy Residencies

Principle 1: The resident will be a pharmacist having sufficiently broad knowledge, skills, attitudes, and abilities in pharmacy practice necessary for further professional development at an advanced level of pharmacy 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 and pharmacy services related to the advanced area of practice will be organized effectively and will deliver comprehensive, safe, and effective services.3

Part III - Interpretation of the Principles

Principle 1: Qualifications of the Resident (The resident will be a pharmacist having sufficiently broad knowledge, skills, attitudes, and abilities in pharmacy practice necessary for further professional development at an advanced level of pharmacy practice.)

Requirement:

1.1 The applicant must have completed an accredited PGY1 pharmacy residency program.
Interpretation of Requirement 1.1: The entering PGY2 resident must have a sound foundation in the broader aspects of pharmacy services to enable the achievement of the more advanced educational goals and objectives developed for each PGY2 pharmacy residency. PGY1 residency training enables the attainment of these entering competencies.
1.2 The applicant must be a licensed pharmacist. In addition, 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 1.2: Since residency instruction 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 in the state or jurisdiction in which the residency program is conducted must be obtained either prior to beginning the residency program or very soon afterwards.
1.3 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 1.3: 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
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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.
1.4 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)3.
Interpretation of Requirement 2.2 (added April 2011): Alternatively, from July 1, 2011 through June 30, 2013, programs will be granted a temporary exemption waiver from the current ACGME standard, and allowed to follow ACGME Common Program Requirements, VI – Resident Duty Hours in the Learning and Working Environment, effective July 1, 2007.
Interpretation of Requirement 2.2 (added April 2012): Effectively July 1, 2013 programs must comply with the Pharmacy Specific Duty Hours Requirements for the ASHP Accreditation Standard for Pharmacy Residencies approved in April 2012 (Duty Hours Appendix). Program will no longer be required to comply with the Accreditation Council for Graduate Medical Education (ACGME) duty hour standards.
2.3 ASHP-accredited, provisionally accredited, and application-submitted residency programs must adhere to the rules of the Resident Matching Program (RMP).
2.4 RPDs 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. 5 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 Residencies*2 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 Residencies2*.
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 6 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.4,5

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) 7

for each educational goal. The program's purpose will be reflected in the program's choice of outcomes. For each outcome there must be educational 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. At the beginning of the resident's program, RPDs must document an individualized set of program outcomes, educational goals, and educational objectives for each resident. In doing so, PGY2 residencies in advanced areas of pharmacy practice must draw upon the program outcomes, educational goals, and educational objectives that have been developed by ASHP specifically for that practice area1 (e.g., critical care, drug information, geriatrics, oncology, primary care). RPDs may establish additional program outcomes, educational goals, and educational objectives that reflect the site's strengths.

For PGY2 residencies in advanced areas of clinical pharmacy practice for which ASHP has not developed a complete set of program outcomes, educational goals, and educational objectives, a generic set of program outcomes, educational goals, and educational objectives (*Program Outcomes, Educational Goals, and Educational Objectives for PGY2 Residencies in an Advanced Area*

*of Pharmacy Practice*1) is available. This generic set of advanced clinical practice goals and objectives is provided as a required framework for programs that must develop their own Standard-mandated, area-specific, complete set of program outcomes, educational goals, and educational objectives. Also, RPDs for programs in non-clinical practice areas lacking ASHP-developed program outcomes, educational goals, and educational objectives must develop a complete set for their residencies. In both cases, RPDs must provide ASHP's Accreditation Service Division their complete set of program outcomes, educational goals, and educational objectives at the time of application.
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 educational goal and objective achievement. The educational goals and objectives, including those for residents' projects, 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.
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.
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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 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 programs 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.)10

Requirements of the residency program director:

5.1 RPDs must be licensed pharmacists with demonstrated expertise in the chosen area of advanced practice, as substantiated by all of the following: (a.) an ASHP-accredited PGY2 residency in the advanced practice area, followed by a minimum of three years of practice experience or equivalent in the advanced practice area [i.e., five years of practice experience in the advanced area with demonstrated mastery of the knowledge, skills, attitudes, and abilities expected of one who has completed a PGY2 residency]; (b.) board certification in the specialty [when certification is offered in that specific advanced area of practice]; and, (c.) maintenance of an active practice in the respective advanced practice area.

Interpretation of Requirement 5.1: For the purposes of the board certification obligation of this requirement, specialties are those recognized by the Board of Pharmaceutical Specialties (BPS), i.e., nuclear pharmacy, nutrition support pharmacy, oncology pharmacy, pharmacotherapy, psychiatric pharmacy, ambulatory care, and those designated with added qualifications. Thus, a residency program director of a PGY2 pharmacotherapy residency must be a board certified pharmacotherapy specialist (BCPS) and a residency program director of a PGY2 oncology pharmacy residency program must be a board certified oncology pharmacist (BCOP).

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:11
a. Documented record of improvements in and contributions to the respective area of advanced 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 Pharmacist preceptors must be licensed and have completed an ASHP-accredited PGY2 residency followed by a minimum of one year of pharmacy

practice in the advanced practice area. Alternatively, licensed pharmacists who have not completed an ASHP-accredited PGY2 residency may be preceptors but must demonstrate mastery of the knowledge, skills, attitudes, and abilities expected of one who has completed a PGY2 residency in the advanced practice area and have a minimum of three years of practice in the advanced area.

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.12
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 Non-pharmacist preceptors (e.g., physicians, physician assistants, certified nurse practitioners) may be utilized for select learning experiences. A pharmacist preceptor must work closely with the non-pharmacist preceptor to select educational goals and objectives for the learning experience, as well as participate actively in the criteria-based evaluation of the resident's performance.
Interpretation of Requirement 5.11: A resident who has completed a PGY1 pharmacy residency will have learned from pharmacist preceptors who modeled

pharmacy practice skills and who provided regular feedback. For PGY2 pharmacy residents, (who have completed an ASHP-accredited PGY1 residency program) when sufficient pharmacist modeling has occurred, the RPD and preceptors agree that the resident is ready for independent practice, and the resident has demonstrated a level of competence that permits preceptor oversight by someone other than a pharmacist (evaluations conducted at the end of previous learning experiences must reflect such readiness to practice independently), it is recognized that the preceptor's primary role may move to facilitation rather than role-modeling during resident learning experiences.

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.13
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., The Joint Commission, American Osteopathic Association (AOA), National Committee for Quality Assurance (NCQA), Det Norske Veritas (DNV)].
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.
Interpretation 6.1 (added April 2011): If a hospital is state-certified as a Medicare and/or Medicaid single provider institution, the state's review process will meet the intent of this section.

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, 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).14
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 and the pharmacy services related to the advanced area of practice 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 practices 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.15
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. Strategic planning documents. 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.
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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 17
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 the 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.
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7.9 Pharmacy services must be provided to all patients of the organization (or practice) that are in the PGY2 residency's practice area. Additional considerations are (as applicable to the practice setting):
a. A sufficient patient population (both in terms of the number of patients and the variety of disease states) must be available in all areas required for instruction in the PGY2 residency program.
b. Pharmacists providing advanced practice services must be essential members of interdisciplinary teams in the patient care areas associated with the residency program.
c. Pharmacists providing advanced practice pharmacy services must participate in the development of treatment protocols, critical pathways, order sets, and other systems approaches involving medications for patients on involved services.

d. For patients of involved advanced practice services, pharmacists must engage in collaborative practice agreements with other providers and should be authorized to manage patients following collaborative practice agreements, treatment protocols, critical pathways, etc.
e. Pharmacists providing advanced practice pharmacy services must participate prospectively in the development of individualized treatment plans for patients of involved services.

Interpretation of Requirement 7.9: It is not acceptable to simulate residency experiences to substitute for nonexistent pharmacy services. The pharmacy service area(s) in which residency training is provided must be an active service that functions 12 months a year. However, the service does not need to be provided by the same individual all 12 months of the year.19

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.6

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.

Multiple-site residency. a residency site structure in which multiple organizations or practice sites are involved in the residency program. Examples include programs in which: residents spend greater than 25% of the program away from the sponsoring organization/main site at another single site; or there are multiple residents in a program and they are home-based in separate sites.

1. To run a multiple-site residency there must be a compelling reason for offering the training in a multiple-site format (that is, the program is improved substantially in some manner). For example: a. RPD has expertise, however the site needs development (for example, site has a good variety of patients, and potentially good preceptors, however the preceptors may need some oversight related to the residency program; or services need to be more fully developed);
b. quality of preceptorship is enhanced by adding multiple sites;
c. increased variety of patients/disease states to allow wider scope of patient interactions for residents;
d. increased administrative efficiency to develop more sites to handle more residents across multiple sites/geographic areas;
e. synergy of the multiple sites increases the quality of the overall program;
f. allows the program to meet all of the requirements (that could not be done in a single site alone); and
g. ability to increase the number of residents in a quality program.

2. A multiple-site residency program conducted in multiple hospitals that are part of a health-system that is considering CMS pass-through funding should conduct a thorough review of 42CFR413.85 and have a discussion with the finance department to ensure eligibility for CMS funding.

3. In a multiple-site residency program, a sponsoring organization must be identified to assume ultimate responsibility for coordinating and administering the program. This includes: a. designating a single residency program director (RPD);

b. establishing a common residency purpose statement to which all residents at all sites are trained;
c. assuring a core program structure and consistent required learning experiences;
d. assuring the core required learning experiences are comparable in scope, depth, and complexity for all residents, if home based at separate sites.;
e. assuring a uniform evaluation process and common evaluation tools are used across all sites;
f. assuring there are consistent requirements for successful completion of the program;
g. designating a site coordinator to oversee and coordinate the program's implementation at each site that is used for more than 25% of the learning experiences in the program (for one or more residents); and,

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h. assuring the program has an established, formalized approach to communication that includes at a minimum the RPD and site coordinators to coordinate the conduct of the program across all sites.

Preceptor. An expert pharmacist who gives practical experience and training to a pharmacy resident. Preceptors have responsibility for the evaluation of resident performance.
Residency program director. The pharmacist responsible for direction, conduct, and oversight of the residency program. In a multiple-site residency, the residency program director is a pharmacist designated in a written agreement between the sponsoring organization and all of the program sites..
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.7
Single-site residency. A residency site structure in which the practice site assumes total responsibility for the residency program. In a single-site residency, a minimum of 60% of the resident's training program occurs at the site (that is, the locations must be within walking distance and be part of the same health system); however, residents may spend assigned time in short elective learning experiences off-site (that is, a one-month rotation offsite does not make a program a multiple-site residency). Conversely, if more then 25% of the remainder of the residency is conducted at one different site, the program will be considered a multiple-site program.
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.

Site coordinator: A preceptor in a multiple-site residency program who is designated to oversee and coordinate the program's implementation at an individual site that is used for more than 25% of the learning experiences. This individual may also serve as a preceptor in the program. A site coordinator must:

1. be a licensed pharmacist who meets the minimum requirements to serve as a preceptor (meets the criteria identified in Principle 5.9 of the appropriate pharmacy residency accreditation standard);
2. practice at the site at least ten hours per week;
3. have the ability to teach effectively in a clinical practice environment; and
4. have the ability to direct and monitor residents' and preceptors' activities at the site (with the RPD's direction).

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Approved by the ASHP Board of Directors, September 23, 2005. Developed by the ASHP Commission on Credentialing. Supersedes the "ASHP Accreditation Standard for Specialized Residency Training (with Guide to Interpretation)", approved April 27, 1994. For currently existing programs this revision of the accreditation standard takes effect January 1, 2007. Until that time the current standard, which was approved April 27, 1994, is in force. Glossary revised and

approved by the Board of Directors on September 23, 2010. Revised April 2011 and April 2012.ASHP Duty Hours 22

Pharmacy Specific Duty Hours Requirements
For the ASHP Accreditation Standards for
Pharmacy Residencies

This applies to requirement 2. 2 in the following ASHP Accreditation Standards:
Postgraduate Year One (PGY1) Pharmacy Residency Programs
Postgraduate Year One (PGY1) Community Pharmacy Residency Programs
Postgraduate Year One (PGY1) Managed Care Pharmacy Residency Programs
Postgraduate Year One (PGY1) Pharmacy Residency Programs – International
Postgraduate Year Two (PGY2) Pharmacy Residency Programs

Definitions:

Duty Hours: Duty hours are defined as all scheduled clinical and academic activities related to the pharmacy residency program. This includes inpatient and outpatient care, in-house call, administrative duties, scheduled and assigned activities, such as conferences, committee meetings, and health fairs that are required to meet the goals and objectives of the residency program. Duty hours must be addressed by a well-documented, structured process.
Duty hours do not include: reading, studying, and academic preparation time for presentations, journal clubs; or travel time to and from conferences; and hours that are not scheduled by the residency program director or preceptor.

Scheduled duty periods: Assigned duties, regardless of setting, that are required to meet the educational goals and objectives of the residency program. These duty periods are usually assigned by the residency program director or preceptor and may encompass hours which may be within the normal work day, beyond the normal work day, or a combination of both.

Moonlighting: Voluntary, compensated, pharmacy-related work performed outside the organization (external), or within the organization where the resident is in training (internal), or at any of its related participating sites. These are compensated hours beyond the resident's salary and are not part of the scheduled duty periods of the residency program.

Continuous Duty: Assigned duty periods without breaks for strategic napping or resting to reduce fatigue or sleep deprivation.

Strategic napping: Short sleep periods, taken as a component of fatigue management, which can mitigate the adverse effects of sleep loss.ASHP Duty Hours 23

DUTY HOURS
Residents, program directors and preceptors have the professional responsibility to ensure they are fit to provide services that promote patient safety. The RPD

must ensure that there is not excessive reliance on residents to fulfill service obligations that do not contribute to the educational value of the residency program or that may compromise their fitness for duty and endanger patient safety. Providing residents with a sound training program must be planned, scheduled and balanced with concerns for patient safety and resident's well-being. Therefore, programs must comply with the following duty hour requirements:

I. Personal and Professional Responsibility for Patient Safety

A. Residency program director must educate residents and preceptors concerning their professional responsibilities to be appropriately rested and fit for duty to provide services required by the patients and health care.

B. Residency program directors must educate residents and preceptors to recognize signs of fatigue and sleep deprivation, and adopt processes to manage negative effects of fatigue and sleep deprivation to ensure safe patient care and successful learning.

C. Residents and preceptors must accept personal and professional responsibility for patient care that supersedes self interest. At times, it may be in the best interest of the patient to transition the care to another qualified, rested provider.

D. If the program implements any type of on-call programs, there must be a written description that includes: • The level of supervision a resident will be provided based on the level of training and competency of the resident and the learning experiences expected during the on-call period
• Identification of a backup system, if the resident needs assistance to complete the responsibilities required of the on-call program.

E. The residency program director must ensure that residents participate in structured handoff processes when they complete their duty hours to facilitate information exchange to maintain continuity-of-care and patient safety.

II. Maximum Hours of Work per Week and Duty Free Times

A. Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities and all moonlighting.
ASHP Duty Hours 24

B. Moonlighting (internal or external) must not interfere with the ability of the resident to achieve the educational goals and objectives of the residency program.

1. All moonlighting hours must be counted towards the 80-hour maximum weekly hour limit.
2. Programs that allow moonlighting must have a documented structured process to monitor moonlighting that includes at a minimum:
a.The type and number of moonlighting hours allowed by the program.
b.A reporting mechanism for residents to inform the residency program directors of their moonlighting hours.
c.A mechanism for evaluating residents overall performance that may affect residents' judgment while on scheduled duty periods or impact their ability to achieve the educational goals and objectives of their residency program and provide safe patient care.
d. A plan for what to do if residents' participation in moonlighting affects their judgment while on scheduled duty hours.

C. Mandatory time free of duty: residents must have a minimum of one day in seven days free of duty (when averaged over four weeks). At-home call cannot be assigned on these free days.

D. Residents should have 10 hours free of duty between scheduled duty, and must have at a minimum 8 hours between scheduled duty periods.

E. If a program has a 24 hour in-house call program, residents must have at least 14 hours free of duty after the 24 hours of in-house duty.

III. Maximum Duty Period Length

A. Continuous duty periods of residents should not exceed 16 hours. The maximum allowable duty assignment must not exceed 24 hours even with built in strategic napping or other strategies to reduce fatigue and sleep deprivation, with an additional period of up to two hours permitted for transitions of care or educational activities.
B. In-House Call Programs 1. Residents must not be scheduled for in-house call more frequently than every third night (when averaged over a four-week period).
2. Programs that have in-house call programs with continuous duty hours beyond 16 hours and up to 24 hours must have a well-documented structured process that oversee these programs to ensure patient safety, resident well-being, and provides a supportive, educational environment. Well-documented, structured process must include at a minimum:
a.How the program will support strategic napping or other strategies for fatigue and sleep deprivation management for continuous duty beyond 16 hours.

b.A plan for monitoring and resolving issues that may arise with residents' performance due to sleep deprivation or fatigue to ensure patient care and learning are not negatively affected.

C. At-Home or other Call Programs

1. At-home call must not be so frequent or taxing as to preclude rest or reasonable personal time for each resident.
2. Program directors must have a method for evaluating the impact on residents of the at-home or other call program to ensure there is not a negative effect on patient care or residents' learning due to sleep deprivation or serious fatigue.
3. Program directors must define the level of supervision provided to residents during at-home or other call.
4. At-home or other call hours are not included in the 80 hours a week duty hour's calculation, unless the resident is called into the hospital/organization.
5. If a resident is called into the hospital/organization from at-home or other call program, the time spent in the hospital/organization by the resident must count towards the 80-hour maximum weekly hour limit.
6. The frequency of at-home call must satisfy the requirement for one-day-in-seven free of duty, when averaged over four weeks. No at-home call can occur on the day free of duty.

Approved by the ASHP Commission on Credentialing on 3/4/2012
Approved by the ASHP Board of Directors on 4/13/12

American Society of Health-System Pharmacists

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

Prepared in collaboration with the Pediatric Pharmacy Advocacy Group

Overview of PGY2 Pharmacy Residencies in Pediatrics

The PGY2 pharmacy residency in pediatrics is designed to transition PGY1 residency graduates from generalist practice to specialized practice focused on the care of pediatric patients. Residency graduates are equipped to participate as integral members of interdisciplinary teams caring for pediatric patients, assuming responsibility for pharmaceutical care. These residents acquire the capacity to deliver evidence-based care to pediatric patients within the limitations presented by the shortage of research in the use of medications in this patient population. They are able to prepare or supervise the preparation of the unique formulations required by pediatric patients as those patients' needs change according to their stage of growth and development.

Pediatric pharmacy residency graduates will serve health care organizations successfully as the ultimate resource for information about medications used in the care of children and for decision-making affecting the care of these patients. This includes leadership in decision-making related to the use or modification of guidelines for the care of individual patients and for participation in organizational planning for, implementation of, and maintenance of technology and automation systems.

Exiting residents have been trained to assume responsibility for identifying and implementing opportunities to improve the medication-use system in pediatric practice areas. Groomed for practice leadership, pediatric pharmacy residency graduates can be expected to continue their pursuit of expertise in practice; to possess advanced skills to identify the pharmacotherapy and medication-use training needs of other health care professionals caring for pediatric patients; to deliver effective training to those health care professionals; and to contribute to public health efforts for health improvement, wellness, and disease prevention.

Explanation of the Contents of This Document:

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 order in which the required educational outcomes are 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.

The educational outcomes, goals, and objectives 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. Other sources of elective outcomes may include elective educational outcomes in the list provided for PGY1 pharmacy residencies and educational outcomes for training in other PGY2 areas. 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.

Instructional Objectives *(IO)*: Instructional objectives 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.

[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.

Required Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Pediatrics

Outcome R1: Demonstrate leadership and practice management skills in the pediatric patient care setting.

Goal R1.1 Exhibit the ongoing development of essential personal skills of a pediatric pharmacy practice leader.

OBJ R1.1.1 (Characterization) Practice self-managed continuing professional development with the goal of improving the quality of one's own performance through self-assessment and change.

IO State criteria for judging one's performance of tasks that are critical in one's own practice.

IO Explain the role of participation in pediatric and pharmacy professional organization meetings in the ongoing development of expertise in pediatric pharmacy.

IO Explain the importance of staying current with pertinent pediatric literature.

OBJ R1.1.2 (Characterization) Demonstrate commitment to the professional practice of pediatric pharmacy through active participation in the activities of local, state, and/or national pediatric and pharmacy professional organizations.

IO Assess the relevance of membership or participation in various professional organizations associated with pediatric pharmacy practice.

IO Explain the importance of contributing to the work of pediatric professional organizations in advancing the visibility of the pharmacist's role in the care of pediatric patients.

OBJ R1.1.3 (Synthesis) Devise an effective plan for balancing professional and personal life.

IO Explain the importance of balancing professional and personal life.

IO Explain potential negative consequences of failure to achieve balance in professional and personal life.

IO Explain various approaches advocated for achieving balance in one's life.

OBJ R1.1.4 (Characterization) Display integrity in professional relationships and actions.

IO Explain ethical dilemmas that may confront the pediatric pharmacist.

IO Explain the system of ethical reasoning employed in arriving at a particular ethical decision.

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

IO Explain the implications of the Belmont Report[2] for ethical decision-making in pediatric pharmacy.

OBJ R1.1.5 (Application) Comply with the requirements of the organization's policy in all interactions with the pharmaceutical industry.

IO Explain the potential conflicts inherent in the objectives of one's health care organization and the objectives of a pharmaceutical industry representative.

OBJ R1.1.6 (Synthesis) Initiate and maintain a systematic approach to documenting professional activities and accomplishments.

Goal R1.2 Contribute to the leadership and management activities within the pediatric pharmacy practice area.

OBJ R1.2.1 (Application) Use effective negotiation skills to resolve conflicts.

OBJ R1.2.2 (Synthesis) Use group participation skills when leading or working as a member of a formal or informal work group.

IO Explain methods for achieving consensus.

IO Explain how to create an agenda for a meeting.

IO Explain methods for assuring participation by all members of a group.

IO Explain methods for effective group leadership.

Goal R1.3 Exercise pediatric pharmacy practice leadership.

OBJ R1.3.1 (Characterization) Demonstrate a commitment to advocacy for the optimal care of pediatric patients through the assertive and persuasive presentation of patient care issues to members of the health care team, the patient, and/or the patient's representative(s).

OBJ R1.3.2 (Characterization) Display initiative in preventing, identifying, and resolving pharmacy-related pediatric patient care problems.

OBJ R1.3.3 (Comprehension) Explain the nature of mentoring in pharmacy, its potential connection with achievement, and the importance of being willing to serve as a mentor to appropriate individuals.

OBJ R1.3.4 (Comprehension) Explain the general processes of establishing and maintaining a pediatric pharmacy residency program.

OBJ R1.3.5 (Comprehension) Explain the benefits, to the practitioner and the profession, of contributing to the pediatric pharmacy literature.

Goal R1.4 Communicate effectively.

OBJ R1.4.1 (Analysis) Use an understanding of effectiveness, efficiency, customary practice and the recipient's preferences to determine the

[2] The Belmont Report.: Ethical Principles for the Protection of Human Subjects of Research. Report from the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (resource on the World Wide Web). URL: http.//ohsr.od.nih.gov/guidelines/guidelines.html. Office of Human Subjects Research, National Institutes of Health. 1979 April 18, Available from Internet. Accessed 2007April 2.

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 techniques for persuasive communications.*

OBJ R1.4.2 (Complex Overt Response) Speak clearly, distinctly, and with correct grammar in the primary language of the practice site.

OBJ R1.4.3 (Application) Use listening skills effectively in performing job functions.

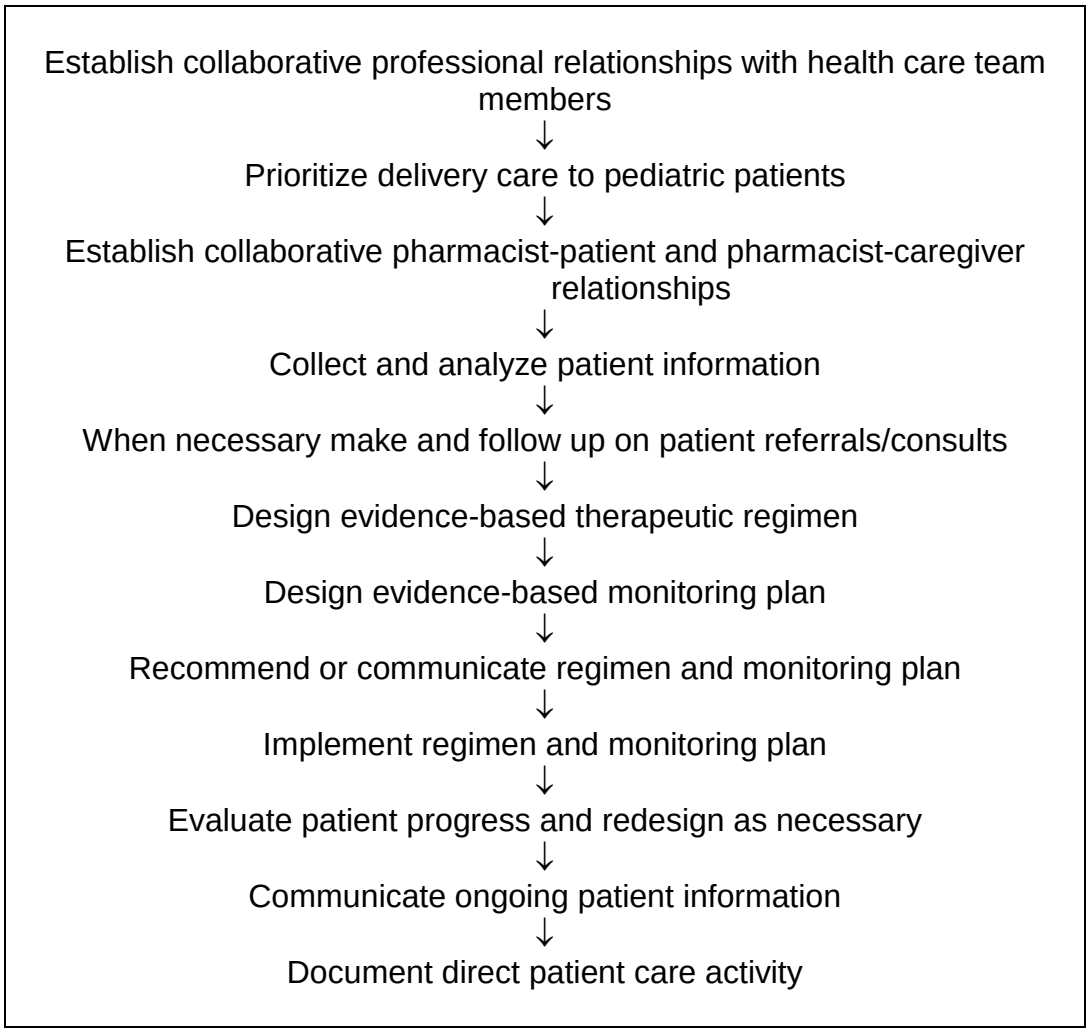
- *IO Explain the use of body language in listening to others.*
- *IO Explain verbal techniques that can be used to enhance listening to others.*

OBJ R1.4.4 (Application) Use correct grammar, punctuation, spelling, style, and formatting conventions in preparing all written communications.

Outcome R2: Optimize the care of inpatient and outpatient pediatric patients by providing evidence-based[3], patient-centered medication therapy as an integral part of an interdisciplinary team.

[3] 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.)

(A residency in pediatric pharmacy is dependent upon the availability of a broad range of patient categories and professional practice experience. Therefore, core experiences in direct patient care must occur with both pediatric inpatients and outpatients. However, the outpatient learning experience may be conducted in the same clinic through the year even if it is focused on a specialty area or a narrow spectrum of disease states, such as pediatric endocrinology or pediatric asthma.)



Goal R2.1 Establish collaborative professional relationships with members of the inpatient and outpatient pediatric interdisciplinary teams.

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

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

IO For each of the professions with which one interacts on the pediatric interdisciplinary team, explain the profession's view

of its role and responsibilities and their expectations of the pharmacist's role in collaborations on patient-centered care.

IO Explain the professional dynamics of the different services that contribute to the care of pediatric patients.

IO Identify the interpersonal dynamics of each member of the pediatric interdisciplinary team.

Goal R2.2 For a caseload of pediatric patients, prioritize the delivery of pharmaceutical care.

OBJ R2.2.1 (Evaluation) Devise a plan for determining the priority for care of pediatric patients if given limited time and multiple patient care responsibilities.

IO Explain factors to consider when determining priority for care among pediatric patients.

Goal R2.3 Establish collaborative pharmacist-patient and pharmacist-caregiver relationships.

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

IO Explain unique characteristics of pediatric patients that may influence pharmacist-patient and pharmacist-caregiver relationships.

IO Explain the importance of including in the strategy an explanation to the patient and/or caregiver of the pediatric pharmacist's role in his/her care.

IO Explain problems associated with emotional attachments between health care professionals and patients.

IO Explain the impact of fear, anger, depression, loss, grief and their opposites on the pharmacist's approach to caring for pediatric patients.

IO Explain techniques for coping with the emotions generated by the abuse of children.

IO Explain the appropriate types of bonds between pharmacists and pediatric patients and their caregivers that can facilitate the pharmacist's capacity to fulfill balanced caring with clinical judgment.

IO Explain the view of diverse cultures and religions on the conceptualization of illness, treatment, and of death and dying.

IO Explain modifications to communication strategies that can be effective in working with children of varying ages.

IO Explain modifications to communication strategies that can be effective in working with the caregivers of pediatric patients.

Goal R2.4 Collect and analyze patient information.

OBJ R2.4.1 (Analysis) Collect and organize all patient-specific information needed by the pediatric pharmacist to make appropriate

evidence-based, patient-centered medication therapy recommendations as part of the pediatric interdisciplinary team. (See Appendix)

- *IO Identify the types of patient-specific information the pharmacist requires to anticipate, prevent, detect, and/or resolve medication-related problems and to make appropriate evidence-based, patient-centered medication therapy recommendations for pediatric patients.*
- *IO Explain each of the developmental stages of children.*
- *IO Explain the normal rates and stages of growth from infancy through adolescence.*
- *IO Explain signs and symptoms, epidemiology, risk factors, pathogenesis, natural history of disease, pathophysiology, clinical course, etiology, and treatment of diseases commonly encountered in pediatric patients.*
- *IO Explain the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacogenomics, pharmacoeconomics, usual regimen (dose, schedule, dosage form, route, and method of administration), indications, contraindications, interactions, adverse reactions, and therapeutics of medications commonly used to treat pediatric patients.*
- *IO Explain age-related differences in pharmacokinetics, pharmacodynamics, usual regimen (dose, schedule, dosage form, route, and method of administration), indications, contraindications, adverse reactions, and therapeutics of medications commonly used to treat pediatric patients.*
- *IO Compare and contrast the pharmacokinetics of drugs in adults and in various pediatric populations.*
- *IO Explain age-related differences in nutritional needs of pediatric patients.*
- *IO Explain methods for meeting the nutritional needs of pediatric patients at each stage of development.*
- *IO Explain age-related differences in vital signs and their interpretation.*
- *IO Explain modifications to standard procedures for measuring vital signs that may be required for various pediatric populations.*
- *IO Explain age-related differences in the interpretation of common laboratory findings.*
- *IO Explain common teratogenic effects of drug exposure in utero.*
- *IO Explain the relative safety for the infant of the presence of various drugs in breast milk.*

OBJ R2.4.2 (Analysis) Determine the presence of any of the following medication therapy problems in the current medication therapy of a pediatric patient:

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 or sensitive to 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-food, or drug-laboratory test interactions or potential for such interactions
10. Medical therapy has been interfered with by social, recreational, nonprescription, complementary, or alternative 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 or caregiver
13. Patient or caregiver lacks understanding of medication therapy
14. Patient or caregiver not adhering to medication regimen

IO *Compare expectations of medication adherence and persistence of pediatric patients or their caregivers when patients are treated in the ambulatory versus inpatient environment.*

IO *Explain the necessity to consider the possibility of transfer of medications to the infant through breast milk.*

IO *Explain the necessity to consider the possibility of in utero exposure to medications.*

IO *Explain the importance of meeting age-appropriate nutritional needs.*

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

IO *Explain economic, social and environmental factors affecting the delivery of health care that should be considered when defining the health care needs of pediatric patients.*

IO Explain the legal system for the protection of children and its impact on their health care.

IO Explain the impact of pediatric patients' growth and development on changes in their health care needs.

Goal R2.5 When necessary, make and follow up on referrals/consults for pediatric patients.

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

OBJ R2.5.2 (Synthesis) Devise a plan for follow-up for a referral/consult for a pediatric patient.

Goal R2.6 Design evidence-based therapeutic regimens for pediatric patients.

OBJ R2.6.1 (Synthesis) Specify therapeutic goals for a pediatric 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 Identify the sources of disease management and medication-use guidelines, consensus statements, and evidence-based meta-analyses currently used in pediatric practice.

IO Explain quality-of-life issues that may impact the setting of therapeutic goals for pediatric patients.

IO Explain ethical issues specific to setting therapeutic goals for pediatric patients.

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

IO Explain the challenge to the pediatric pharmacist of designing therapy in the absence of guidelines and supportive literature.

IO Explain additional concerns with availability, adherence, persistence, palatability, stability (especially with extemporaneous preparations), storage, cost, and route of administration to be considered when making decisions on medication regimens for pediatric patients treated in the inpatient versus ambulatory care environment.

IO Explain factors that affect the delivery of small-volume parenteral drug therapy to pediatric patients.

IO Explain how to calculate pediatric medication doses according to body weight, body surface area, or other standard methods preferred by the health care organization.

IO Explain how to modify the dosing regimen of a medication in pediatric patients with organ dysfunction.

IO Explain unique concerns for designing enteral and parenteral nutritional therapies for pediatric patients versus adults.

IO Explain the effect of dialysis on the disposition of medications in pediatric patients.

IO Explain the effect of extracorporeal membrane oxygenation on the disposition of medications in pediatric patients.

IO Explain the effect of continuous renal replacement therapy on the disposition of medications in pediatric patients.

Goal R2.7 Design evidence-based monitoring plans for pediatric patients.

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

IO State standard monitoring parameters for therapeutic regimens commonly prescribed for pediatric patients.

IO Explain the relationship between the normal value ranges for parameters measured in pediatric patients and the influence of a disease state.

IO Explain psychosocial issues unique to pediatric patients and/or their caregivers that should be considered when designing a monitoring plan.

IO Explain the potential role of the patient's caregiver in the fulfillment of a monitoring plan.

Goal R2.8 Recommend or communicate regimens and monitoring plans for pediatric patients.

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, caregivers, and, when appropriate, the pediatric patient, in a way that is age-appropriate, systematic, logical, accurate, timely, and sensitive.

IO Explain the kinds of issues that require particular sensitivity when discussing treatment plans with pediatric patients and/or their caregivers.

Goal R2.9 Implement regimens and monitoring plans for pediatric patients.

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

IO Explain the organization's policies and procedures for ordering inpatient and outpatient medications.

IO Explain the organization's policies and procedures for ordering tests.

OBJ R2.9.2 (Complex Overt Response) When appropriate, exercise skill in the administration or supervision of the administration of a pediatric patient's therapeutic regimen.

- *IO Explain different devices used to deliver medications to various pediatric populations.*
- *IO Explain unique aspects of administration of oral medications, eye drops, ear drops and suppositories in pediatric patients.*
- *IO Explain how to perform intramuscular and subcutaneous injections.*
- *IO Explain how to administer an intravenous medication.*
- *IO Explain how to do an endotracheal administration of a medication.*
- *IO Explain how to administer a medication through inhalation (e.g., nebulization, metered-dose inhalers).*
- *IO Explain how to administer a medication through the intraosseous route.*
- *IO Explain how to administer a medication through intrathecal, intraventricular, and epidural routes.*

OBJ R2.9.3 (Application) When necessary, contribute to the work of the team that secures reimbursement for medications used in a regimen for a pediatric patient.

- *IO Explain the general framework of patient assistance programs available for pediatric medications.*
- *IO Explain the pharmacist's role (versus other interdisciplinary team members) in securing payer coverage or patient assistance.*
- *IO Explain circumstances in which it may be appropriate to redesign a patient's medication regimen in order to ensure that a patient will have financially viable access to prescribed pediatric medications.*
- *IO Explain various approaches used to adjust medication regimens in order to facilitate patient access to pediatric medications.*
- *IO Explain organizational policies and procedures for securing compassionate use medications needed for an individual patient.*

OBJ R2.9.4 (Synthesis) Use effective patient education techniques to provide medication-related counseling to a pediatric patient and the patient's caregiver(s).

- *IO Explain the concept of readiness-to-learn and its implications for the timing of counseling for pediatric patients and their caregivers.*
- *IO Explain the types of patient and caregiver education required to facilitate self-care.*
- *IO Explain how to tailor patient education so that it is age appropriate.*
- *IO Identify resources for prepared materials designed for the education of pediatric patients and their caregivers.*

IO Explain issues unique to the counseling of pediatric patients and their caregivers.

IO Explain differences in issues with adherence and persistence between adult and pediatric patients.

IO Explain lay terms that can successfully be used when counseling pediatric patients and their caregivers regarding complex medication-related issues.

Goal R2.10 Evaluate the progress of pediatric patients and redesign regimens and monitoring plans.

OBJ R2.10.1 (Evaluation) Accurately assess progress toward the therapeutic goal(s) of a pediatric patient.

OBJ R2.10.2 (Application) Ensure that accurate and timely medication-specific information regarding a specific pediatric patient reaches those who need it at the appropriate time.

OBJ R2.10.3 (Synthesis) Redesign the regimen and monitoring plan of a pediatric patient as necessary based on evaluation of monitoring data and therapeutic outcomes.

Goal R2.11 Communicate ongoing patient information to facilitate continuity of care.

OBJ R2.11.1 (Synthesis) Formulate a strategy for continuity of pharmaceutical care across all applicable treatment settings.

IO Explain potential problems that may place pediatric patients at risk in various treatment settings (e.g., hospital, clinic, home) or upon change in level of care.

IO Explain accrediting organizations' requirements for medication reconciliation across the continuum of care.

IO Explain methods for coordinating information between multiple pharmacy and other health care workers serving the needs of pediatric patients that will facilitate the provision of pharmaceutical care.

IO Explain methods for assuring continuity of pharmaceutical care across all treatment settings used by a specific patient.

IO Explain continuity of care issues that may arise when unique pharmaceutical formulations used in the acute care setting will also be used by the patient in an alternate care setting.

OBJ R2.11.2 (Application) When given a pediatric patient who is transitioning from one health care setting to another, communicate pertinent pharmacotherapeutic information to the receiving health care professionals.

Goal R2.12 Document direct patient care activities appropriately.

OBJ R2.12.1 (Analysis) Appropriately select direct patient care activities for pediatric patients for documentation.

IO Explain the organization's policies and procedures for identifying activities that must be documented.

OBJ R2.12.2 (Application) Use effective communication practices when documenting a direct patient-care activity for a pediatric patient.

IO Explain the organization's policies and procedures for documenting direct patient care activities.

Outcome R3: Serve as an authoritative resource on the optimal use of medications used to treat pediatric patients.

Goal R3.1 Establish oneself as an organizational expert for pediatric pharmacy-related information and resources.

OBJ R3.1.1 (Synthesis) Implement a successful strategy for earning credibility within the organization to be an authoritative resource on the pharmaceutical care of pediatric patients.

IO Identify barriers for the pediatric pharmacist to earning credibility with members of the interdisciplinary pediatric team.

IO Identify barriers for the pediatric pharmacist to earning credibility within the organization.

Goal R3.2 Contribute the pediatric pharmacist's perspective to technology and automation systems decisions.

OBJ R3.2.1 (Synthesis) When appropriate, contribute to the organization's design of its technology and automation systems.

IO Explain the pediatric pharmacist's role in contributing to the design of technology systems (e.g., CPOE, PDAs, software, smart pumps) for the organization.

IO Explain the pediatric pharmacist's role in contributing to decisions regarding automation systems.

OBJ R3.2.2 (Synthesis) When appropriate, contribute to the organization's implementation of its technology and automation systems.

IO Explain factors to consider when implementing technology and automation systems in the pediatric setting.

OBJ R3.2.3 (Synthesis) When appropriate, contribute to the organization's maintenance of its technology and automation systems.

IO Explain the importance of ongoing evaluation of the organization's technology and automation systems.

IO Explain the pediatric pharmacist's role in contributing to the maintenance of technology systems for the organization.

IO Explain the pediatric pharmacist's role in contributing to the maintenance of the organization's automation systems.

Goal R3.3 Select core biomedical literature resources appropriate for pediatric pharmacy practice.

OBJ R3.3.1 (Application) Use knowledge of standard resources to select core primary, secondary, and tertiary biomedical literature resources appropriate for pediatric pharmacy practice.

IO State sources of primary, secondary, and tertiary pediatric biomedical literature.

IO Compare the characteristics of each of the available resources.

Goal R3.4 Provide concise, applicable, comprehensive, and timely responses to requests for drug information pertaining to the care of pediatric patients.

OBJ R3.4.1 (Analysis) Discriminate between the requester's stated drug information question and the appropriate drug information need(s) by investigating the clinical situation and obtaining appropriate additional information.

OBJ R3.4.2 (Synthesis) Formulate a systematic, efficient, and thorough procedure for retrieving pediatric drug information.

OBJ R3.4.3 (Analysis) Determine from all retrieved biomedical literature the appropriate information to evaluate.

OBJ R3.4.4 (Evaluation) Evaluate the usefulness of biomedical literature gathered.

IO Explain scarcity of studies and subjects as causes for the frequent necessity to consider the clinical usefulness of less comprehensive studies when evaluating literature for pediatric patients.

OBJ R3.4.5 (Evaluation) Determine whether a study's conclusions are supported by the study results.

OBJ R3.4.6 (Synthesis) Formulate responses to a drug information request based on analysis of the literature.

OBJ R3.4.7 (Synthesis) Provide appropriate responses to drug information questions that require the pediatric pharmacist to draw upon his or her knowledge base.

OBJ R3.4.8 (Evaluation) Assess the effectiveness of drug information recommendations.

IO Explain all factors that must be assessed to determine the effectiveness of a response.

Goal R3.5 Contribute to publishing periodic newsletters or bulletins for health care providers on timely medication-related matters and medication policies.

OBJ R3.5.1 (Synthesis) Write an article for a newsletter or bulletin addressing either a medication or a medication policy affecting pediatric patients.

Goal R3.6 Assist the organization in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the use of medications used in the care of pediatric patients (e.g., The Joint Commission requirements; ASHP standards, statements, and guidelines; state and federal laws regulating pharmacy practice; OSHA regulations).

OBJ R3.6.1 (Evaluation) Determine appropriate activities and documentation to meet accreditation, legal, regulatory, and safety requirements in the area of pediatric pharmacy.

IO Explain the influence of accreditation, legal, regulatory, and safety requirements on pediatric pharmacy practice.

Goal R3.7 Contribute to the management of pediatric medical emergencies.

OBJ 3.7.1 (Synthesis) Exercise skill as a team member in the management of a pediatric medical emergency according to the organization's policies and procedures.

IO Explain appropriate medication therapy in pediatric medical emergency situations.

IO Explain unique considerations when preparing and dispensing medications and calculating doses during a pediatric medical emergency.

OBJ R3.7.2 (Complex Overt Response) When administration is allowed by the organization, exercise skill in the administration of emergency medications for a pediatric patient.

Goal R3.8 Understand the role of the pediatric pharmacist in public health initiatives affecting children.

OBJ R3.8.1 (Comprehension) Explain the pediatric pharmacist's role in the development of emergency protocols for public health disasters (e.g., natural disaster, bioterrorism, epidemic).

OBJ R3.8.2 (Comprehension) Explain the role of the pediatric pharmacist in advocacy for vaccination.

IO Explain the importance of vaccination in the prevention and control of the spread of infectious diseases.

IO Explain how to secure credentials for administering vaccinations.

Outcome R4: Evaluate, manage, and improve the medication-use process in pediatric patient care areas.

Goal R4.1 Prepare and dispense medications for pediatric patients following existing standards of practice and the organization's policies and procedures.

OBJ R4.1.1 (Evaluation) Interpret the appropriateness of a pediatric patient's medication order before preparing or permitting the distribution of the first dose.

OBJ R4.1.2 (Application) Follow the organization's policies and procedures to maintain the accuracy of the patient's medication profile.

OBJ R4.1.3 (Application) Prepare a pediatric patient's medications following appropriate standards of practice and the organization's policies and procedures.

IO Explain the necessity for pediatric pharmacists' insistence on safety and quality control for pediatric medications.

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

IO Explain standards for evaluating appropriate concentrations, rate, compatibilities, stability, and storage of parenteral solutions prepared for use in the care of pediatric patients.

IO Explain strategies for preparing extemporaneously compounded medications to produce the desired end products for pediatric patients.

OBJ R4.1.4 (Application) Dispense medications for a pediatric patient following the organization's policies and procedures.

Goal R4.2 Contribute to the maintenance of the organization's formulary for medications used in the care of pediatric patients.

OBJ R4.2.1 (Evaluation) Make a recommendation for an addition or deletion to the organization's formulary for medications used in the care of pediatric patients based on literature and/or comparative reviews.

IO State the elements of a comparative review.

IO State sources to consult in the preparation of a comparative review for medications used in the care of pediatric patients.

IO Explain the importance of including consideration of efficacy, safety, and cost in the preparation of reviews.

OBJ R4.2.2 (Synthesis) Formulate effective strategies for communicating formulary restrictions to providers.

IO Explain routes of communication of formulary information in the pediatric setting.

IO Identify instances when formulary changes should be communicated immediately.

OBJ R4.2.3 (Evaluation) When presented with a real or hypothetical drug shortage, identify appropriate alternative medications.

IO State resources for identifying medications in short supply.

IO Explain the organization's system for communicating information regarding drug shortages.

IO Explain a strategy for making optimal choices for alternative medications.

OBJ R4.2.4 (Evaluation) When the needs of a particular patient warrant, determine if a non-formulary medication should be considered for therapy.

IO Identify the appropriate literature that supports the use of a non-formulary medication in a clinical situation.

IO Explain the organization's system for approving, obtaining, and handling non-formulary medication used by patients.

Goal R4.3 Contribute to the review of existing, development of new, and implementation of the organization's policies and procedures affecting the care of pediatric patients.

OBJ R4.3.1 (Synthesis) Contribute to the work of an organizational committee or work group concerned with the improvement of medication-use policies and procedures that affect the care of pediatric patients.

Goal R4.4 Contribute to the review of existing, development of new, and implementation of the organization's evidence-based medication-related guidelines for the care of pediatric patients.

OBJ R4.4.1 (Analysis) Identify the need for an evidence-based medication-related guideline for the care of pediatric patients by comparing the applicability of existing organizational or published guidelines to the needs of your own organization.

IO Explain the impact of the lack of scientific studies evaluating the safety and efficacy of medications in children on the pediatric pharmacist's strategy for providing evidence-based care.

OBJ R4.4.2 (Synthesis) Contribute to the development of a medication-related guideline for the care of pediatric patients based on best available evidence and the characteristics of the local environment and patients.

IO Explain how level of evidence is determined.

OBJ R4.4.3 (Synthesis) Contribute to the formulation of a strategy that will successfully implement a medication-related guideline for the care of pediatric patients.

IO Explain the importance of including pharmacy, nursing, and medical services in the design of an implementation strategy.

OBJ R4.4.4 (Evaluation) Assess the results of implementing a medication-related guideline for the care of pediatric patients.

Goal R4.5 Identify opportunities for improvement of the safety of aspects of the organization's medication-use system affecting pediatric patients.

OBJ R4.5.1 (Analysis) When applicable, contribute to a root cause analysis (RCA) of a medication error occurring in a pediatric patient.

OBJ R4.5.2 (Analysis) When applicable, contribute to a failure mode and effect analysis (FMEA) of a proposed new medication-use process affecting the care of pediatric patients.

OBJ R4.5.3 (Application) Participate in the organization's system for reporting medication errors and adverse drug reactions.

Outcome R5: Demonstrate excellence in the provision of training or educational activities for pediatric health care professionals, health care professionals in training, and the public.

Goal R5.1 Provide effective education and/or training to health care professionals and health care professionals in training.

OBJ R5.1.1 (Synthesis) Use effective educational techniques in the design of an educational/training activity.

IO Identify emerging issues in pediatric pharmacy that would be suitable for interdisciplinary educational sessions.

IO Explain the differences in effective educational strategies when teaching colleagues versus residents versus students versus health professionals in other disciplines.

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

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

IO Write appropriately worded educational objectives.

IO Explain the match between instructional delivery systems (e.g., demonstration, written materials, video) and the specific types of learning each facilitates.

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 (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 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.

IO Explain the importance of identifying the key teaching points for a case before attempting to construct it.

IO Explain factors to consider when deciding the patient data to present in a case.

OBJ R5.1.5 (Application) Use public speaking skills to speak effectively to a large group.

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 public speaking skills to speak effectively in a small group.

Goal R5.2 Design and deliver education programs to the public that center on pediatric health improvement, wellness, and disease prevention.

OBJ R5.2.1 (Synthesis) Contribute to the design of an educational program for the public that centers on pediatric health improvement, wellness, or disease prevention.

IO Explain appropriate educational topics for pediatric support groups.

IO Explain appropriate educational topics for the general public that center on pediatrics.

OBJ R5.2.2 (Synthesis) Use appropriate educational techniques to deliver an educational program to the public that centers on pediatric health improvement, wellness, or disease prevention.

Outcome R6: Conduct pediatric pharmacy research.

Goal R6.1 Conduct a pediatric pharmacy research project using effective research and project management skills.

OBJ R6.1.1 (Synthesis) Identify a topic of significance for a pediatric pharmacy research project.

- *IO Explain the types of resident projects (e.g., prospective, retrospective, clinical trials) 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 pediatric literature search for the background analysis.*
- *IO Explain how to generate a research question(s) to be answered by an investigation.*

OBJ R6.1.2 (Synthesis) Formulate a feasible design for a pediatric pharmacy research project.

- *IO Explain the elements of a project proposal.*
- *IO Explain how to identify those health care personnel who will be affected by the conduct of the project and strategies for gaining their cooperation.*
- *IO Explain how to determine a timeline with suitable milestones that will result in project completion by an agreed upon date.*
- *IO Explain factors unique to the conduct of research in pediatric patients.*
  - *IO Explain the ethics of research on pediatric subjects and the role of the IRB.*
  - *IO Explain the difference between consent and assent.*
- *IO Explain various methods for constructing data collection tools.*

OBJ R6.1.3 (Synthesis) Secure any necessary approvals, including IRB, for a pediatric pharmacy research project.

- *IO Explain how to identify those stakeholders who must approve a particular project.*
- *IO Explain the components that make up a budget for a project.*
- *IO Explain strategies for seeking funding for a research project.*
- *IO Explain the role of the IRB in the approval process.*

OBJ R6.1.4 (Synthesis) Implement a pediatric pharmacy research project as specified in its design.

- *IO Explain strategies for keeping one's work on a project at a pace that matches with the projected timeline.*

IO When given a particular approved residency project, explain methods for organizing and maintaining project materials and documentation of the project's ongoing implementation.

IO Explain methods for data analysis.

IO Explain issues surrounding confidentiality of patient information accessed for a research study.

OBJ R6.1.5 (Synthesis) Effectively present the results of a pediatric pharmacy research project.

OBJ R6.1.6 (Synthesis) Use correct grammar, punctuation, spelling, style, and formatting conventions to prepare a written manuscript describing a pediatric pharmacy research 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.

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

Outcome E1: Demonstrate added skills for functioning effectively in the pediatric pharmacy practice environment.

Goal E1.1 Develop a proposal for a new pediatric pharmacy-related service.

OBJ E1.1.1 (Synthesis) Write a proposal for a pediatric pharmacy-related service that meets a perceived need of the health system and its patients.

Goal E1.2 Contribute to the maintenance of the organization's formulary for medications used in the care of pediatric patients.

OBJ E1.2.1 (Evaluation) Make recommendations for drug class decisions affecting the care of pediatric patients based on comparative reviews.

Goal E1.3 Demonstrate additional skills in the management of pediatric medical emergencies.

OBJ E1.3.1 (Synthesis) Acquire pediatric advanced life support (PALS) certification.

Goal E1.4 Contribute to the presentation and publication of pediatric pharmacy research.

OBJ E1.4.1 (Synthesis) Design an effective poster for the presentation of a specific topic.

IO Explain the types of content that should be included in a poster.

IO Explain the rules for visual presentation of poster material.

IO Explain resources that can be used to generate poster materials.

OBJ E1.4.2 (Synthesis) Exercise skill in responding to questions occurring during the presentation of a poster.

OBJ E1.4.3 (Application) Follow the submission requirements of an appropriate peer-reviewed publication to submit the completed project for publication.

OBJ E1.4.4 (Evaluation) Contribute to the peer review of a pediatric pharmacy professional's article submitted for publication or presentation.

IO Explain sources of information on the components of a peer review.

Outcome E2: Conduct outcomes research.

Goal E2.1 Contribute to pediatric clinical, humanistic and economic outcomes analyses.

OBJ E2.1.1 (Evaluation) Contribute to a pediatric 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 E2.1.2 (Evaluation) Contribute to a pediatric 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 E3: Demonstrate skills required to function in an academic setting.

Goal E3.1 Understand faculty roles and responsibilities.

OBJ E3.1.1 (Comprehension) Explain variations in the expectations of different colleges/schools of pharmacy for teaching, practice, research, and service.

- *IO Discuss how the different missions of public versus private colleges/schools of pharmacy can impact the role of faculty members.*
- *IO Discuss maintaining a balance between teaching, practice, research and service.*
- *IO Discuss the relationships between scholarly activity and teaching, practice, research and service.*

OBJ E3.1.2 (Analysis) Explain the role and influence of faculty in the academic environment.

- *IO Explain the responsibilities of faculty in governance structure (e.g. the faculty senate, committee service).*
- IO *Describe the responsibilities of faculty (e.g. curriculum development and committee service) related to teaching, practice, research, and service roles.*

OBJ E3.1.3 (Comprehension) Describe the academic environment.

- *IO Describe how the decisions by university and college administration impact the faculty.*
- *IO Discuss outside forces (e.g. change in the profession, funding source, accreditation requirements) that impact administrator and faculty roles.*

OBJ E3.1.4 (Comprehension) Describe the types and ranks of faculty appointments.

- *IO Explain the various types of appointments (e.g. non-tenure, tenure-track, and tenured faculty).*
- *IO Differentiate among the various ranks of faculty (e.g. instructor, assistant professor, associate professor, full professor).*
- *IO Discuss the role and implications of part-time and adjunct faculty as schools continue to expand and faculty shortages occur.*

OBJ E3.1.5 (Comprehension) Discuss the promotion and/or tenure process for each type of appointment.

- *IO Identify the types of activities that are considered in the promotion process.*
- *IO Identify the types of activities that are considered for tenure.*

OBJ E3.1.6 (Application) Identify resources available to help develop academic skills.

- *IO Explain the role of academic-related professional organizations (e.g. AACP) in faculty professional development.*
- *IO Identify resources to help develop teaching skills and a teaching philosophy.*

OBJ E3.1.7 (Comprehension) Explain the characteristics of a typical affiliation agreement between a college of pharmacy and a practice site (e.g., health system, hospital, clinic, retail pharmacy).

IO Explain how the political environments of either a college or a practice site may affect the other.

Goal E3.2 Exercise teaching skills essential to pharmacy faculty.

OBJ E3.2.1 (Synthesis) Develop an instructional design for a class session, module, or course.

IO Construct a student-centered syllabus.

IO Construct educational objectives for a class session, module, or course that is appropriate to the audience.

IO Identify appropriate instructional strategies for the class session, module, or course to achieve the objectives.

IO Consider assessment tools that measure student achievement of the educational objectives.

OBJ E3.2.2 (Synthesis) Prepare and deliver didactic instruction on a topic relevant to the specialized area of pharmacy residency training.

IO Identify educational technology that could be used for a class session, module, or course (e.g., streaming media, course management software, audience response systems).

IO Create instructional materials appropriate for the topic and audience.

IO Identify strategies to deal with difficult learners.

IO Given feedback from teaching evaluations (e.g. student and or peer), devise a plan to incorporate improvements in future instruction.

OBJ E3.2.3 (Application) Develop and deliver cases for workshops and/or exercises for laboratory experiences.

IO Identify the appropriate level of case-based teachings for small group instruction.

IO Identify appropriate exercises for laboratory experiences.

IO Provide appropriate and timely feedback to improve performance.

OBJ E3.2.4 (Application) Serve as a preceptor or co-preceptor utilizing the four roles employed in practice-based teaching (direct instruction, modeling, coaching and facilitation).

IO Assess the learner's skill level to determine the appropriate preceptor strategy for providing practice-based teaching.

IO Given performance-based criteria, identify ways to provide constructive feedback to learners.

IO Develop strategies to promote professional behavior.

IO Identify strategies to deal with difficult learners in the practice setting.

IO Given a diverse learner population, identify strategies to interact with all groups with equity and respect.

OBJ E3.2.5 (Analysis) Develop a teaching experience for a practice setting (e.g., introductory or advanced pharmacy experience).

IO Create educational goals and objectives to be achieved.

- *IO Develop activities that will allow achievement of identified educational goals and objectives.*
- *IO Identify how and when feedback should be provided.*
- *IO Identify other preceptors for the experience, if appropriate.*
- *IO Determine training that might be needed for the preceptors to deliver student education.*
- *IO Identify potential challenges of precepting and providing patient care services simultaneously.*

OBJ E3.2.6 (Synthesis) Design an assessment strategy that appropriately measures the specified educational objectives for the class session, module, course, or rotation.

- *IO Identify appropriate techniques for assessing learning outcomes in various educational settings [e.g., written examinations, oral examinations, practical examinations, Objective Structured Clinical Examination (OSCE)].*
- *IO Develop examination questions to assess the knowledge, skills, attitudes and behaviors that are appropriate to the learner's level and topic.*
- *IO Discuss the various methods for administering examination questions (e.g., computerized testing, paper testing).*

OBJ E3.2.7 (Evaluation) Create a teaching portfolio.

- *IO Define the concept of a teaching portfolio and describe its primary purpose*
- *IO Outline the steps in building a teaching portfolio.*
- *IO Develop a personal teaching philosophy to guide one's teaching efforts and facilitate student learning.*

OBJ E3.2.8 (Evaluation) Compare and contrast methods to prevent and respond to academic and profession dishonesty.

- *IO Evaluate physical and attitudinal methods to prevent academic dishonesty.*
- *IO Discuss methods of responding to incidents of academic dishonesty.*
- *IO Discuss the role of academic honor committees in cases of academic dishonesty.*
- *IO Identify examples and methods to address unprofessional behavior in learners.*

OBJ E3.2.9 (Comprehension) Explain the relevance of copyright laws to developing teaching materials.

- *IO Discuss copyright regulations as related to reproducing materials for teaching purposes.*
- *IO Discuss copyright regulations as related to linking and citing on-line materials.*

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The effective date for implementation of these educational outcomes, goals and objectives is commencing with the entering resident class of 2009.

Appendix

The resident will explain signs and symptoms, epidemiology, risk factors, pathogenesis, natural history of disease, pathophysiology, clinical course, etiology, and treatment of diseases and conditions listed below.

The resident will explain the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacogenomics, pharmacoeconomics, usual regimen (dose, schedule, form, route, and method of administration), indications, contraindications, interactions, adverse reactions, and therapeutics of medications and non-traditional therapies, where relevant, that are applicable to the diseases and conditions listed below.

Cardiovascular

- Arrhythmias
- Congestive heart failure
- Kawasaki disease
- Hemolytic uremic syndrome
- Hypertension
- Rheumatic heart disease
- Shock

Collagen Vascular Disease

- Juvenile rheumatoid arthritis
- Lupus

Endocrine

- Adrenocortical insufficiency
- Diabetes insipidus
- Diabetes mellitus – Type 1 and Type 2
- Growth hormone deficiency
- Inborn errors of metabolism
- Rickets
- SIADH
- Thyroid disease

Fluid and Electrolyte Disorders

- Acid/base disorders
- Dehydration

Gastrointestinal

- Appendicitis
- Chronic diarrhea
- Constipation
- Gastroesophageal reflux

Hemorrhage
Inflammatory bowel syndrome
Nausea/vomiting
Short bowel syndrome
Ulcers

Hematology

Anemia
DIC
Hemophilia
ITP
Sickle cell disease

Infectious disease

AIDS/HIV
Catheter sepsis
Cellulitis
Conjunctivitis
Croup
Diarrhea
Endocarditis
Epiglottitis
Fever
Fungal infections
Immunocompromised host
Impetigo
Meningitis
Osteomyelitis
Otitis media
Parasitic infections
Pneumonia
Sepsis
Septic arthritis
Sexually transmitted diseases
Shunt infections
Strep throat
Tuberculosis
Urinary tract infection
Viral encephalitis
Respiratory syncytial virus

Liver Disease

Cholestatic jaundice
Hepatitis
Liver failure

Neonatology

- Apnea with bradycardia
- Bronchopulmonary dysplasia
- Congenital heart disease
- Intraventricular hemorrhage
- Necrotizing Enterocolitis
- Hyperglycemia
- Hypoglycemia
- Ophthalmia neonatorum
- Patent ductus arteriosus
- Persistent pulmonary hypertension
- Respiratory distress syndrome
- Retinopathy of prematurity
- Seizures
- Sepsis

Nephrology

- Interstitial nephritis
- Renal failure
- Renal tubular acidosis

Neurology

- Attention deficit disorder
- Febrile convulsions
- Headache
- Head trauma
- Intracranial hypertension
- Seizures
- Status epilepticus

Obstetric problems

- Diabetes

Oncology

- CNS malignancies
- Hemangioma
- Hodgkin’s disease
- Leukemia
- Lymphoma
- Neuroblastoma
- Osteosarcoma
- Retinoblastoma
- Rhabdomyosarcoma

Psychosocial

- Depression
- Enuresis

Pulmonary

- Acute respiratory distress syndrome
- Asthma
- Bronchiolitis
- Cystic fibrosis
- Near drowning
- Status asthmaticus

The resident will be knowledgeable in the following topics as they relate to pediatric patients:

Antibiotic prophylaxis
Anticoagulation
Continuous renal replacement therapy
Drug abuse
Drug dosing in hepatic impairment
Drug dosing in renal impairment
Drugs in breast milk
Drugs in pregnancy
Enteral nutrition
- infant formulas
- nutritional supplements

Immunizations
Induction of labor
Infants of diabetic mothers
Infants of drug abusers
Intrauterine infections
Maintenance fluids
Oncologic emergencies
Oral rehydration
Pain management
Parenteral nutrition (neonates, infants, children)
Pharmacokinetics (general and developmental/age-related differences)
Pre-eclampsia/eclampsia
Premature labor
Premature rupture of membranes
Prenatal care/nutrition
Sedation and analgesia