DESCRIPTION OF LEARNING ACTIVITIES

Learning Experience: Ambulatory Care

The ambulatory care component of the residency program includes a required three week rotation and longitudinal experiences requiring clinic attendance by the resident one morning or afternoon per week from mid-August through June. The focus of this rotation is the provision of pharmaceutical care to pediatric patients receiving chronic outpatient care at the Children's Hospital Ambulatory Care Center. Patients include those with HIV/AIDS, solid organ transplant, cystic fibrosis, gastro-intestinal disorders, and Tourette syndrome. Patients range in age from infants to young adults. Residents will be required to provide the following services:

- Patient/family interview to obtain medication history and identify and resolve patient medication problems
- Therapeutic drug monitoring and medication adjustment utilizing subjective and objective data.
- Documentation of patient medication information in the format appropriate for each clinic
- Medication counseling and education to pediatric patients and their caregivers on new prescriptions, medication compliance, and inhaler techniques.
- Follow-up of detected drug therapy problems by alteration in therapy, initiation of new therapy, health education, referral to other sources of care, or other appropriate measures.
- Drug information services to fellow members of the clinic interdisciplinary health care clinic team
- Appropriate documentation of clinic activities
- Performing a pre-transplant evaluation of a renal patient
- Performing post-renal transplant medication counseling
- Writing an article for the HIV clinic newsletter
- Performing an educational presentation to children on poison prevention
- Performing an educational presentation to children on transplant medications

Core content which will be covered via patient experiences and discussions of reading materials includes:

- HIV/AIDS
- Renal Transplant
- Liver Transplant
- Cystic Fibrosis
- Tourette Syndrome
- ADD/ADHD
- Immunizations
- Motivational Interviewing/Assessment of Readiness To Learn

Learning Experience: Drug Information

The drug information rotation is a longitudinal rotation for pharmacy residents. The focus of this rotation is the provision of drug information to the hospital's pharmacy, nursing, and medical staff. Some examples of the types of drug information provided include pharmacy CE, articles for the
pharmacy newsletter, responses to specific drug information questions, and medication utilization evaluations. Residents will be required to provide the following services:

- Two live CE’s for the pharmacy staff (1 prior to January and 1 after January)
- Write 6 drug information articles for the pharmacy newsletter
- Provide formal written responses to at least two drug information requests
- Complete one medication utilization evaluation
- Complete two drug monographs
- Document drug information requests in Rxapps
- Place a copy of any completed written drug information response in the drug information folder in Rx2.
- Provide 4 journal clubs

**Learning Experience: General Pediatrics**

The general pediatrics rotation is a one month acute care rotation for pharmacy residents. The focus of this rotation is the provision of pharmaceutical care to the patients of the General Pediatrics Services. These services consist of 5-6 teams that care for an average of 40 patients daily. Patients have acute and chronic pediatric disease states, and they either utilize the Jefferson County Health Departments/local pediatricians as primary care or are referred patients from throughout the state of Alabama. These teams also provide care to all pediatric cardiology patients not requiring intensive care monitoring. The patients range in age on the service from newborns to young adults. Residents will be required to provide the following services:

- Daily patient medication profile review with identification and resolution of patient medication problems
- Daily rounding with one of the General Pediatrics Interdisciplinary Teams
- Rounding with the Pediatric Cardiology attending and resident weekly
- Pharmacokinetic consults
- Drug information
- Coordination of medication ordering and distribution with inpatient pharmacy
- Discharge Medication Teaching

In addition to patient care, the resident will have the opportunity to work with advance practice experience Pharm.D. students to develop precepting skills. The resident will also have the chance to participate in didactic education at the McWhorter School of Pharmacy at Samford University in a pediatrics pharmacy elective. This course meets for 2 hours weekly and involves student learning through patient cases. The resident will be expected to:

- With preceptor guidance, answer student questions as related to patient care
- Attend pediatric pharmacy elective class once weekly and help facilitate small group of 4-5 students studying patient cases.

**Learning Experience: Hematology**

The pediatric hematology rotation is a 1-week experience for pharmacy residents. The focus of this rotation is the provision of complete pharmaceutical care services to the inpatient and outpatient hematology-oncology service, with an emphasis on hematology topics. Residents will be required to provide the following activities:

- Daily patient profile review with identification and resolution of patient medication problems
- Daily rounding with pediatric hematology-oncology service
- Pharmacokinetic assessment and recommendations
- Drug information services that specifically includes 1 written activity and/or 1 journal club
• Participate in chemotherapy ordering and distribution processes
• Coordinate and resolve problems with outpatient prescriptions
• Document activities and interventions
• Complete the rotation examination

Learning Experience: Investigational Study Pharmacy

This component of the residency program consists of one week training with the investigational study pharmacist in the investigational study pharmacy. The training will consist of the resident obtaining UAB IRB certification by completing the CITI Program for The Protection of Human Research Subjects Learner’s Course in preparation of the residency project. The investigational study pharmacy training will also provide hands-on dispensing of study medications while learning the state, federal and institutional statues governing research. The resident will understand the importance and relevance of study medication research in pediatrics. Requirements of the resident for this component of the resident program include:

• Obtaining UAB IRB certification by completing the CITI certification course on line.
• Learning the state and federal laws concerning research medication dispensing
• Reviewing the Children’s Hospital Investigational Study Medications Policy and Procedures
• Reviewing current research studies in the study pharmacy
• Dispensing study medication per protocol, institutional and statute dictates.
• Obtaining an overview of the team structure of research teams at Children’s Hospital

Learning Experience: Management

The management rotation is a longitudinal rotation for pharmacy residents. The focus of this rotation is to provide the opportunity for the development in leadership, operational and financial management, and administrative skills necessary for the successful completion of the management practice rotation. Skills will also be developed in planning, organizing, implementing, and monitoring and evaluating. Residents will be required to provide the following services:

• Complete 1 major management project
• Help with pharmacy performance improvement projects as assigned
• Help with planning for medication shortages
• Perform compliance audits (anticoagulation and others assigned)
• Perform a workflow on one pharmacy process
• Attend Crucial Conversations class (must register in CHEX).
• Attend Root Cause Analysis Class
• Attend Failure Modes and Effects Analysis Class
• Reading/research
  o Research Myers/Briggs personality types and discuss
  o Research Lean and discuss
  o Research 6 Sigma and discuss
  o Read at least 4 Opal topics and discuss
  o Research business ideas applied to pharmacy and present at least one of these to the pharmacy management team.
• Report at least 5 adverse drug events
• Have a budget discussion with the supervisor of finance
• Prepare the clinical travel budget
• Attend 4 pharmacy policy and procedure meetings and revise/write one policy.
• Attend 4 Joint Commission (JC) Opportunity meetings
• Attend 5 Medication Error Review Team meetings
• Research 2 medication errors
• Attend 8 Medication Safety meetings
• Submit 4 management reports (1 per quarter)
• Submit Thanksgiving, Christmas and New Year’s pharmacokinetic coverage schedule
• 4 Snapshots (1 per quarter)
  o Policy and Procedure
  o Adverse Drug Event reporting
  o Medication error management
  o Staffing schedule

Learning Experience: Neonatal Intensive Care (NICU)

The neonatal intensive care rotation is a 4-week experience for pharmacy residents. The focus of this rotation is the provision of complete pharmaceutical care services to the inpatient neonatal intensive care service. Residents will be required to provide the following activities:

  • Daily patient profile review with identification and resolution of patient medication problems
  • Daily rounding with neonatal intensive care team
  • Pharmacokinetic assessment and recommendations
  • Provision of drug information to health care professionals that specifically includes 1 continuing education
  • Coordination of medication ordering, administration and distribution, working in conjunction with the inpatient pharmacy. This includes ensuring accuracy of nursing medication administration records to that of pharmacy medication profiles and daily updates as to changes in continuous infusions, TPNs, etc.
  • Attendance at all medical emergencies while onsite (“resident physicians” and traumas)
  • Document activities and interventions

Learning Experience: Nephrology

The renal rotation is a two week acute care rotation for pharmacy residents. The focus of this rotation is the provision of complete pharmaceutical care services to the in-house renal population and to the dialysis are unit. The patients range in age from newborn to young adults. Residents will be required to provide the following services.

  • Daily patient profile review with identification and resolution of patient medication problems
  • Daily rounding with the renal service
  • Pharmacokinetic consultations
  • Drug information services
  • Coordination of medication ordering and distribution problems, working in conjunction with the inpatient pediatric pharmacy
  • Documentation of activities through the MIS intervention pathway.

Learning Experience: Oncology

The pediatric oncology rotation is a 5 week experience for pharmacy residents. The focus of this rotation is the provision of complete pharmaceutical care services to the inpatient and outpatient hematology-oncology service. Residents will be required to provide the following activities:

  • Daily patient profile review with identification and resolution of patient medication problems
• Daily rounding with pediatric hematology-oncology service
• Pharmacokinetic assessment and recommendations
• Drug information services that specifically includes 1 written activity and 1 journal club
• Participate in chemotherapy ordering and distribution processes
• Coordinate and resolve problems with outpatient prescriptions
• Document activities and interventions
• Complete the rotation examination

**Learning Experience: Orientation**

The orientation component of the residency program consists of approximately 5 weeks of training and orientation through various traditional dispensing areas of the pharmacy. Training areas include the IV room, inpatient order entry, surgery satellite pharmacy, PYXIS, inventory, and PO’s. Training in sterile product preparation, parenteral certification training, and experiences on second and third shifts is also included. The focus of this rotation is the provision of knowledge of Children’s Hospital pharmacy operating procedures and skills using pharmacy electronic programs, both of which are needed during staffing requirements and clinical rotations.

**Learning Experience: Pediatric Intensive Care Unit (PICU)**

The Pediatric Intensive Care Unit rotation is a one month critical care rotation for pharmacy residents. The focus of this rotation is the provision of pharmaceutical care services to the 19-bed PICU patient population. The patients include children of all ages, both previously healthy and those with underlying disease (with the exception of premature neonates). Unique to this unit are patients on ventilators, patients on CRRT and post-operative patients. The PICU is involved in several investigational drug studies and is capable of providing many new therapies, including extracorporeal membrane oxygenation (ECMO) and inhaled nitric oxide. Residents will be required to provide the following services:

• Daily patient profile review with identification and resolution of patient medication problems
• Coordination of medication ordering, administration and distribution, working in conjunction with the inpatient pharmacy. This includes ensuring accuracy of nursing medication administration records to that of pharmacy medication profiles and daily updates as to changes in continuous infusions, TPNs, etc.
• Daily rounding with the multidisciplinary PICU team
• Pharmacokinetic consultations on all patients in the PICU, including those patients not followed by the PICU team
• Provision of drug information to health care professionals
• Attendance at all medical emergencies while onsite (“resident physicians” and traumas)
• Participation in daily team education, including patient simulation experiences

In addition to patient care, the resident may have the opportunity to work with advance practice experience Pharm.D students to develop precepting skills.

**Learning Experience: Pharmacokinetics**

The clinical pharmacokinetics rotation is a longitudinal required rotation for pharmacy residents. The primary purpose of this as a longitudinal rotation is to allow the resident to gain confidence in his/her knowledge in the specific area of pharmacokinetics and have the opportunity to integrate those skills into practice throughout the year. This will also allow the resident to gain sufficient practice time to develop independent patient problem-solving skills and enhance overall experience in this area.
While practicing at the health system, the resident will be part of the clinical team that includes attending physicians, medical fellows and residents, nurses and nurse practitioners. The resident will be expected to cooperate and interact with each member of the team and become a resource for each of them. By becoming a trusted member of the team and gaining confidence in his/her ability to function as the pharmacists for everyone on the team and our patients, the resident will become a vital component of the health care team.

The resident's daily responsibilities are as follows:

- Print patient pharmacokinetic list for services following (this includes coverage for absences of clinical staff). List can be printed by unit for call purposes.
- Review list for any urgent patient issues (extraordinary supratherapeutic levels, SCr changes, random levels that need immediate action, etc.)
- Review laboratory values (chemistry, microbiology, drug levels)
- Review medication profiles for patients' on call list (medication reconciliation)
- Review patient chart (Monitoring of progress notes, nursing notes, I&O's) medication cardex, EMARs
- Follow-up with attending team/physicians or nurse practitioners on patient specific recommendations.
- Take clinical call every other week (unless otherwise scheduled)
- Staff clinical weekend every 4th weekend (or non-clinical) as scheduled or determined by preceptor and program director.
- Documentation of all activities through Eclipsys &/or Logician.

Learning Experience: Project

The project component of the residency program consists of a major residency project completed by the resident over a period of approximately 7 months. The topic of the project must be agreed upon by the residency director and residency committee and must involve either pharmacy-related medical research, evaluation or development of pharmacy department policies and procedures, or development and evaluation of a service to benefit Children’s Hospital patients. Requirements of the resident for this component of the resident program include:

- Submission of a project topic to the residency director and residency committee for approval.
- Submission of a written project idea proposal to the residency director and project preceptor.
- Obtaining any necessary approval or funding for the project.
- Submission of a formal abstract of the project.
- Practice presentations of the project results to the residency committee.
- Formal presentation of the project results at either the Southeastern Residency Conference or the Pediatric Pharmacy Advocacy Group Residency Showcase.
- Submission of the project results to the residency director and project preceptor in a publishable format.

Learning Experience: Pulmonary

The Pulmonary rotation is a four-week rotation for the pharmacy practice residents. The primary objective of the rotation is for the resident to provide complete pharmaceutical care services to patients on the pulmonary service. On the inpatient service, the residents will care for patients with any pulmonary illness. In addition, the residents will attend cystic fibrosis clinic one day per week. Here the residents will assist in facilitating outpatient care for patients with complex medication regimens. Residents will be required to provide the following services:
- Daily patient profile review with identification and resolution of patient medication problems
- Daily rounding with the pulmonary MD service and pulmonary NP service
- Pharmacokinetic assessments and adjustments
- Drug information services including the completion of one pulmonary specific project
- Coordination of medication ordering and distribution problems, working in conjunction with the inpatient pharmacy
- Coordination of patient discharges including outpatient medication preparation and medication teaching
- Participation in cystic fibrosis clinic

**Learning Experience: Regional Poison Control Center (RPCC)**

The RPCC rotation is a two-week toxicology rotation for pharmacy residents. The focus of this rotation is to provide triage, treatment recommendations and follow up with the public exposed to various poison and healthcare professions caring for poisoned patients, regardless of age, throughout the state of Alabama. Currently the RPCC handles > 45,000 calls per year. Residents will be required to provide the following services:

- Answer the Regional Poison Control Center hotline
- Handle drug identification calls
- Handle poison exposure callers from the public
- Consult with healthcare professional and make treatment recommendations on poison exposures

**Learning Experience: Staffing**

The staffing rotation is a longitudinal rotation for pharmacy residents. The focus of this rotation is to provide the opportunity for the development of various traditional processing and dispensing functions. Skills will also be developed in operating procedures and the utilization of pharmacy electronic programs, both of which are needed to fulfill the rotation.

**Learning Experience: Stem Cell Transplant Unit (SCTU)**

The Stem Cell Transplant Unit rotation is a one week rotation for pharmacy residents. The focus of this rotation is the provision of complete pharmaceutical care services to the SCTU patient population. The SCTU is an 8 bed unit and an outpatient clinic. The patients include mostly hematology/oncology and other immune deficient patients. Residents will be required to provide the following services:

- Daily patient profile review with identification and resolution of patient medication problems
- Daily rounding with SCTU service
- Pharmacokinetic consultations
- Drug information services
- Providing prescription medication and medication teaching sheets to outpatients in the SCTU unit

**Learning Experience: Advanced General Pediatrics Elective**

The advanced general pediatrics elective rotation is a 2-4 week elective acute care rotation for pharmacy residents. The focus of this rotation is the provision of pharmaceutical care to the patients
of General Pediatrics Services. These services care for an average of 40 patients daily. Patients have acute and chronic pediatric disease states, and they either utilize the Jefferson County Health Departments/local pediatricians as primary care or are referred patients from throughout the state of Alabama. These services also provide care to all pediatric cardiology patients not requiring intensive care monitoring. The patients range in age on the service from newborns to young adults. Residents will be required to provide the following services:

- Patient medication profile review with identification and resolution of patient medication problems
- Daily rounding with one of the General Pediatrics Interdisciplinary teams for a minimum of ½ of the rotation
- Rounding with the Pediatric Cardiology Division a minimum of weekly.
- Pharmacokinetic consults
- Drug information
- Coordination of medication ordering and distribution with inpatient pharmacy
- Discharge Medication Teaching

**Learning Experience: Advanced Infectious Diseases Elective – ID II**

The advanced ID elective rotation is a two to four week rotation for pharmacy residents. The focus of this rotation is to provide care to the patients of the Infectious Diseases (ID) Consult Service with advanced pharmacy clinical services. This service consults on pediatric patients at Children's Health System and The University of Alabama at Birmingham Hospital who have acute and chronic pediatric infectious diseases states. The patients range in age on the service from newborns (including those with prematurity) to young adults. Patient severity of illness ranges from critically ill patients to those who receive follow-up in the ID clinic (continuity patients). Residents will be participating in the following activities/services:

- Daily patient medication profile review with identification and resolution of patient medication problems, including daily rounding with the ID Consult Service
- Pharmacokinetic consults as necessary
- Drug information questions as needed
- Management of all outpatient IV patients including lab monitoring, order changes, and medication history updates
- Coordination of medication ordering and distribution with inpatient/outpatient pharmacy (as needed) including patients seen in clinic for 1st doses of antimicrobials
- Attendance at weekly Tuesday ID noon conference
- Attendance at a weekly ID clinics (Wednesday/Friday, and Monday orthopedic clinic as needed)
- Protocol development and projects as necessary for pharmacy staff, ID fellows/faculty, and floor nurses.

**Learning Experience: Advanced Pediatric Intensive Care Unit Elective (PICU)**

The Pediatric Intensive Care Unit rotation II is a several week critical care elective rotation for pharmacy residents who have completed the PICU I rotation but who desire more time in this area. The focus of this rotation is to build on skills acquired in the PICU I rotation including continuing the provision of pharmaceutical care services to the 19-bed PICU patient population. Residents will be required to provide the following services:

- Daily patient profile review with identification and resolution of patient medication problems
- Coordination of medication ordering, administration and distribution, working in conjunction with the inpatient pharmacy. This includes ensuring accuracy of nursing medication
administration records to that of pharmacy medication profiles and daily updates as to changes in continuous infusions, TPNs, etc. For this advanced rotation, more time should be spent entering the orders for medication drips and facilitating drug delivery to ensure overall pharmaceutical care.

- Daily rounding with the multidisciplinary PICU team
- Pharmacokinetic consultations on all patients in the PICU, including those patients not followed by the PICU team
- Provision of drug information to health care professionals. For the advanced portion of the PICU II, an in-service to nursing or physicians should be provided during the rotation period.
- Attendance at all medical emergencies while onsite (“resident physicians” and traumas)
- Participation in daily team education, including patient simulation experiences

Experiences specific to this advanced rotation will include time spent with the intensive care physicians with the sedation opportunities and/or coverage of the CICU at UAB Hospital.

In addition to patient care, the resident may have the opportunity to work with advance practice experience Pharm.D. students to develop precepting skills, but do the advanced nature of this rotation, the resident shall take more of the teacher role in this relationship.

**Learning Experience: Cardiology Elective**

The cardiology elective rotation is a two to four week acute care rotation for pharmacy residents. The focus of this rotation is the provision of pharmaceutical care to the patients of the CICU and Children’s Cardiology Service, including patients who have acute and chronic pediatric cardiology disorders. The patients range in age on the service from newborns (including those with prematurity) to young adults. Patients’ severity of illness ranges from critically ill patients to those who receive follow-up in the cardiology clinic. Residents will be required to provide the following services:

- Daily patient medication profile review with identification and resolution of patient medication problems
- Daily rounding with the CICU or Cardiology Service
- Cardiology clinic attendance
- Pharmacokinetic consults
- Drug information
- Coordination of medication ordering and distribution with inpatient pharmacy

**Learning Experience: Emergency Department Elective (ED)**

The emergency department elective rotation is a two to four week acute care rotation for pharmacy residents. The focus of this rotation is the provision of pharmaceutical care to patients in the emergency department. Residents will be required to provide the following services:

- Identify and Prevent Medication Errors by reviewing orders and assessing ED processes
- Identify inconsistencies in allergy documentation between Codonix and Eclypsis
- Review orders on Codonix with medications pulled from Pyxis for billing discrepancies
- Act as a drug information resource
- Perform retrospective medication review (for dosing and drug interactions)
- Determine the feasibility of providing pharmacy-related services, including:
  - Medication reconciliation
  - Attending codes
  - Retrieving medications needed quickly which are not supplied in Pyxis
  - Evaluate ER Pyxis-supplied medications versus actual usage
  - Prospective order review
  - Clinical consults (i.e. discharge medication education)
Serve as central pharmacy/ED and ED/floor medication information liaison

Learning Experience: Staffing Elective

The staffing elective is a 2 to 6 week rotation for pharmacy residents. The focus of this rotation is to provide the opportunity for further development of various traditional processing and dispensing functions, primarily to build skills for the resident’s career post-residency. More advanced skills will also be developed in operating procedures and the utilization of pharmacy electronic programs.