



**Department of Pharmacy
PGY2 Solid Organ Transplant Residency Program
2015-2016**

The Solid Organ Transplant PGY-2 Pharmacy Residency Program at Rush University Medical Center is a one year residency established to provide specialty training for residents interested in organ transplantation. The program offers multidisciplinary and comprehensive care of recipients of liver, kidney, and kidney/pancreas transplants of a diverse patient population. Following completion of this program, the resident will have developed the skills necessary for the competent, compassionate, and evidence-based care of transplant recipients. This residency has received accreditation by the American Society of Health-System Pharmacists (ASHP).

Purpose Statement

The purpose of the PGY2 Solid Organ Transplant Residency at Rush University Medical Center is to acquire the expertise necessary for independent specialized practice in solid organ transplant, including proficiency in caring for liver, kidney and pancreas transplant recipients. The primary focus of the residency is the enhancement of patient care, clinical research, and education. Upon completion of this residency, graduates will be prepared to practice as a solid organ transplant pharmacotherapy specialist in an acute and/or ambulatory care environment.

Goals

The primary goal of the program is to develop independent clinicians able to care for solid organ transplant patients in an academic medical setting. This overarching goal will be completed through exposure to a variety of rounding opportunities where the resident will serve as an integral member of the rounding team by participating in medication therapy management, answering key clinical questions and serving as a resource to the healthcare team. The resident will have an opportunity to enhance teaching abilities through didactic lectures to other disciplines in the medical center as well as at colleges of pharmacy, self and peer evaluation and being a preceptor to first year pharmacy residents and doctor of pharmacy students. The program will also develop research skills through completion of a longitudinal research project and manuscript preparation.

The residency program is designed to comply with the published accreditation standards of the American Society of Health-Systems Pharmacists (ASHP). See *Appendix C* for details regarding topics covered during the residents PGY2 CC residency year.

Structure of the PGY2 Residency Program

Required rotations:

****Note:** Each required rotation is 4 weeks in length unless otherwise specified

- Inpatient Abdominal Transplant
- Outpatient Abdominal Transplant
- Surgical Intensive Care Unit (SICU)
- Transplant Infectious Disease (ID)
- Transplant Nephrology
- Transplant Hepatology

Elective rotations:

- Cardiac Intensive Care Unit (CICU)
- Pediatric Transplant (off-site)
- Heart/Lung Transplant (off-site)
- Bone Marrow Transplant
- *Repeat of any of the required rotations*

Other required activities of the PGY2 residency program:

- Precept IPPE and APPE pharmacy students and pharmacy practice residents
- Research project
- Case presentations/journal clubs
- Drug Utilization Evaluation (DUE)
- Development of or updating of a practice guideline or policy related to solid organ transplant
- Practice obligation
- On-call program

Longitudinal Learning Experiences

- Code blue emergencies
- Acute Stroke Response
- Transplant Quality Improvement Committees
- Staffing

Typical Monthly Schedule

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1 7a-5p Service	2 7a-5p Service 12n: resident presentation	3 7a-5p Service 12n:Medicine Grand Rounds	4 7a-5p Service	5 7a-5p Service	6 Practice obligation
7 Practice Obligation	8 7a-5p Service	9 7a-5p Service 12n: resident presentation 2:30p: Kidney Quality	10 7a-5p Service 12n: Medicine Grand Rounds On call	11 7a: go home 2p: Liver Quality	12 7a-5p Service	13 Off

14 Off	15 7a-5p Service	16 7a-5p Service 12n: resident presentation	17 7a-5p Service 12n: Medicine Grand Rounds	18 7a-5p Service	19 7a-5p Service	20 Off
21 Off	22 7a-5p: Service	23 7a-5p Service 12n: resident presentation On call	24 7a: go home 12n: Medicine Grand Rounds	25 7a-5p Service	26 7a Lunch with Nora 7a-5p Service	27 Off

On-Call Program

The resident will be expected to take overnight call in the medical center approximately one out of every fourteen nights. Responsibilities during call include, but are not limited to, pharmacokinetic drug monitoring, answering clinical questions, participation in code blue emergencies, approval of restricted antimicrobials, and participation in acute stroke emergencies.

The on-call program will provide 24/7 clinical coverage to the medical center in addition to that provided by the midnight pharmacists. Expectations for overnight call will be discussed with the resident during orientation.

Practice Obligation

The resident will be required to work two 8-hour shifts every fourth weekend and be on-call every 14th night. The resident will also be required to work two official hospital holidays-one major holiday (Thanksgiving Day, Christmas Day, New Year's Day) and one minor holiday (Labor Day, Fourth of July, Memorial Day). The assigned location for weekend staffing will be covering the general surgery floor, and providing clinical coverage for the solid organ transplant service through rounding and discharge facilitation. For holiday staffing, the assigned location for staffing will be in an adult satellite in order to expand the resident's knowledge and exposure to different patient populations. The resident should be on-time to his or her work site. Tardiness will not be permitted. If the resident would like to take a weekend off, the resident may switch weekends with another resident or pharmacist. Trading of shifts must be approved by the Residency Program Director and any other manager or RPD the change will impact.

Presentations

During the course of the year, the resident will be expected to complete a minimum of:

- 1 patient case
- 1 journal club
- 1 presentation focusing on a disease state
- 1 nursing in-service
- Formal presentation of research project in preparation for Great Lakes Pharmacy Residency Conference (GLPRC)

****NOTE:** The resident may be expected to do an additional journal club or case presentation while on rotation. This will be determined by each individual clinical specialist while the resident is on rotation.

All patient cases, journal clubs and disease state presentations will include a thorough review of the appropriate literature. A handout, separate from slides, will be expected for one presentation throughout the year. Presentations should be 40-50 minutes in length, with the exception of the GLPRC presentation, which should be 18-22 minutes in length.

A presentation outside of the department may substitute one of the above requirements with the approval of the residency program director.

Residents will be evaluated by clinical specialists and fellow residents following journal clubs, patient cases and presentations.

Research Project

The PGY2 resident will be expected to complete a longitudinal research project in collaboration with an experienced preceptor. The project will be of the resident's choice and involve a transplant concept. The project will be presented at the Great Lakes Residency Conference in April or at the American Transplant Congress (ATC) in June. The equivalent of one month of the year will be dedicated for research activities.

Committee Assignments

The resident will be assigned to the following committees:

- Transplant Quality Improvement Committee (TQIC)

The resident will be actively involved in the following committees as needed:

- Kidney and Kidney/Pancreas Quality Workgroup
- Liver Transplant Quality Workgroup
- Heart Transplant Quality Workgroup

A clinical specialist will accompany the resident to each meeting. The resident will be expected to meet once weekly or once a month, depending on the assigned committee.

Residency Binder

All residents will be expected to keep a residency binder of completed projects, lectures, Power Point presentations and policies. Any of the following which has received critique should accompany each document as well.

Pager Responsibility

Each resident will be assigned a Rush pager. The resident will be responsible for carrying his or her pager when they are on Rush premises. The resident will be expected to sign his or her pager out as unavailable or to another pharmacist when out of town or unable to return pages in a timely fashion. This process will be reviewed during orientation.

Parking Information

The medical center provides both sheltered and non-sheltered parking facilities. Additional parking information including rates can be obtained by calling the Parking Garage Office at ext. 2-6594.

Adverse Drug Reaction and Medication Error Reporting (e.g., unusual occurrences)

The resident will be responsible for reporting both witnessed and unwitnessed adverse drug reactions (ADRs). Each ADR will be documented via the hospital's unusual occurrence (UO) database, located on any Rush computer terminal. Ann Jankiewicz, PharmD, BCPS will review all UO reports and assess the medication error in terms of severity and potential for harm to the patient.

Professional Attire

The resident will be expected to wear his or her Rush ID badge at all times while in the medical center. In addition, professional attire, including lab coats while on the floors, will be required. Scrubs are only permitted to be worn during on-call hours, when working in an OR pharmacy satellite or when watching a surgery. Scrubs should not be worn during staffing hours. Compliance with the department's dress code will be enforced.

****NOTE:** Two lab coats will be ordered for the resident in July

Rush University Bookstore

The Rush University Bookstore will be open Monday through Friday, from 8:30 am – 5 pm. Books are sold at a 10% discount. A Rush affiliated ID must be present at the time of purchase to receive the discount.

Great Lakes Pharmacy Residency Conference (GLPRC)

The resident may attend and present his or her residency research project at GLPRC. GLPRC is held in April each year at Purdue University. Registration and abstract submission must be completed by February 1st. Power Point files must be uploaded to the GLPRC website by early April. During the month of April, the resident will have the opportunity to present his or her slides and receive feedback to the department. Please see the website, www.glprc.com, for additional details.

Health Insurance

Please refer to orientation materials distributed during hospital orientation or materials located in Human Resources (4th floor of the Academic Facility) for more information.

Interventions

The resident will be required to document any clinical intervention through the pharmacy department's I-vent system in EPIC®. These interventions will represent recommendations made during a rotation as well as during staffing hours.

Interviewing

The resident will be given five working days in order to interview for jobs. Any time over 5 days will be deducted from PTO. Residents must make preceptors aware of all interview dates prior to taking off.

LEAP

LEAP (Linking Education and Performance) will allow each resident \$1000 annually to be used towards continuing education programs (i.e., registration for local and national meetings may be submitted for reimbursement). The reimbursement LEAP form will be located on the K drive (K/Residents/LEAP form). Documentation of CE completion from the meeting will need to be submitted; therefore, compensation will be provided after the meeting has occurred.

Licenses

All residents will be required to be licensed in the State of Illinois. If the resident is not licensed by July 1st, he or she must have a valid Illinois pharmacy technician license. If reciprocity or score transfer is necessary, this process must be initiated as soon as possible. Pharmacy licenses must be turned into Sara Wilke, PharmD for filing and documentation purposes. The resident must be registered to take the NAPLEX and the Illinois Law exam by July 7th with the ultimate goal of pharmacist licensure by August 1st. If the resident fails to receive proper licensure or documentation that the licensure is forthcoming by August 1st, he/she must notify the Residency Program Director and the Director of Pharmacy. Direct supervision by a licensed pharmacist will be required during all staffing and clinical rounding activities until proper licensure is obtained. Additional time will be added to the end of the PGY2 transplant residency year if licensure is not obtained by August 1st (*ie ending in July vs June*). Failure to

obtain Illinois licensure by November 1st is grounds for dismissal from the residency. Please review ADM1 policy for additional information.

Lost and Found

Items lost may be claimed in the Security Office located on the first floor of Jelke (ext. # 2-6393). Lost items that are unclaimed within 60 days will be returned to the person turning them in.

Mailboxes and Messages

The resident will be assigned a mailbox located in the pharmacy offices. The resident will be instructed to check his or her mailbox regularly. Email is generally the most common method of communication within the department and hospital. Rush email should be checked on a daily basis.

Medical Grand Rounds

Medical Grand Rounds will be held every Wednesday at noon in the AB Dick Auditorium (located in the sub-basement of the Atrium building). Conferences will reflect disease state topics from various specialties. The resident will be encouraged to attend these weekly, as rotation time permits.

Meetings

The resident is expected to attend all departmental staff meetings, unless excused by the residency program director. These meetings will generally be held in the central fill area (CFA).

Mentor

The resident will be expected to select a mentor from the department at the beginning of the year. This mentor should be a clinical specialist practicing in the resident's area of interest. The resident's mentor will be expected to attend all resident quarterly evaluations.

Overtime/Duty Hours

The resident will be expected to commit his or her full-time to the residency. Working in other positions outside of the medical center will not be permitted. The resident may sign up for open shifts within the department; these must be approved by a program director. The resident will not be eligible for overtime salary or wages if he or she works an extra shift; straight pay will be compensated.

The resident must work a minimum of 40 hours per week and adhere to the schedule assigned by his or her preceptor. During orientation, hours will be assigned by satellite supervisors to accommodate for various training times. The resident must be away from the medical center for at least 8 hours, and ideally 10 hours, in between duty hours.

The duty hours, consistent with ASHP and ACGME, will be limited to 80 hours per week, averaged over a 4 week work period. Residents must be provided one day off out of seven, averaged over a 4 week period.

Confidential Information

The resident will be exposed to a variety of confidential information throughout the year. Such information must be kept private and comply with HIPAA standards. The resident will receive HIPAA training during the orientation month.

Professional Organization Membership

The resident will be required to become a member of ASHP during the residency year. It is also highly recommended that the resident become a member of the American Society of Transplantation.

Residency Advisory Committee

The Residency Advisory Committee (RAC) is comprised of the PGY1 Residency program director, PGY2 Residency program director, a subset of clinical specialists, Corporate Director of Pharmacy and the PGY1 resident in charge. The purpose of the RAC is to oversee the structure and requirements of the PGY1 and PGY2 residency programs and assist the program directors with maintaining ASHP accreditation. Decisions made by the RAC will be relayed to clinical specialists for a final decision. Goals of the RAC include:

- Maintain appropriate structure and organization of PGY1 and PGY2 residency programs
- Assist in the updating and development of changes to the programs
- Assist in the evaluation of potential candidates
- Provide guidance in planning the residency rotation schedule
- Establish a minimum standard for individuals wishing to precept residents
- Assist with any other issues which program directors deem necessary

Residency Annual Report

The resident will be expected to provide an annual report of all completed projects at the end of the year. The report will be utilized to document the cost-effectiveness of a resident versus a full-time pharmacist.

Residency Applicant Assistance

The resident will be encouraged to offer his or her assistance in the form of time, local transportation and lodging to applicants who interview. No departmental funding is currently available or allotted to assist with this. Interviews will occur during January and February.

Residency Showcase

The resident will be expected to attend the ASHP midyear clinical meeting and staff the Rush University Medical Center booth. In addition, there may be local residency showcases that the resident may attend (Butler University, Chicago College of Pharmacy, University of Illinois and University of Wisconsin).

Salary

Each resident will be paid \$48,250 annually. The resident will receive a paycheck every other Friday. Paychecks will be deposited via direct deposit, which can be set up through the payroll department.

Smoking and Eating Policy

Smoking will be prohibited on hospital grounds. Eating is prohibited in all storage and dispensing areas of the pharmacy department. These include: satellite areas where drugs are prepared and dispensed, pharmacy stores and manufacturing/packaging areas.

Vacation

The resident will be entitled approximately 27 days of vacation. This can be taken at any time during the year (with the exception of the last two weeks of the residency), with the approval of the program director and preceptor whose rotation the resident is currently on. It will be expected that the resident request time off well in advance to allow for appropriate coverage while the resident is away.

- Attendance at ASHP midyear or other professional meetings will not be considered as vacation time
- The resident will be required to work two official hospital holidays throughout the year. The other official holidays will be taken out of the resident's PTO.
- Any leftover vacation time at the end of the year will be paid out to the resident upon departure from the medical center

Address and Telephone Number

The resident will be responsible for maintaining a local address and telephone number on file with the residency program director. If any changes occur during the year, the resident will be held responsible for notifying the residency program director.

Rush business cards will be ordered for the resident in July in preparation for residency showcases and the ASHP midyear meeting.

Telephone Calls (Long Distance)

Long distance telephone calls for residency-related and departmental business can be made via the hospital's telephone system. Personal long distance calls should be made using the resident's personal phone. Collect calls will not be allowed unless approved by the program director or a preceptor.

Sick Leave/Leave of Absence

Absence due to illness will be deducted from the resident's PTO. The resident will be expected to contact the program director and preceptor via email and telephone if he or she is sick. If the resident calls in sick on a weekend, he or she must contact the central pharmacy and pharmacy supervisor on-call (PAOC) in addition to the program director.

Day shift: call at least 2 hours prior to starting time

Evening shift: call at least 3 hours prior to starting time

Rotations: call and email rotation preceptor and program director

The resident will be considered a full-time employee in the Department of Pharmacy. He or she will have the same rights to leave of absence as all other employees.

The medical center fully complies with all federal and state laws relating to employee leave of absence. The resident should contact Employee Relations with any questions (ext. 2-5916).

Types of leave at Rush include:

- FMLA (Family/Medical leave) – birth, adoption of a child or serious medical condition relating to employee, employee's spouse or family
- Personal leave – educational, compelling personal circumstances or non-FMLA qualifying medical leave
- Military leave for active or reserve duty
- Humanitarian leave to work in organizations (Peace Corp)
- Victims Economic Security and Safety Act, which addresses a leave for an employee who is a victim of domestic violence

Details of the above can be obtained through Human Resources (ext. 2-5916). Extension of the residency program past the anticipated end date (June 30th) could be accommodated based upon circumstances.

Teaching Responsibilities

The resident will be expected to provide in-services to medical and nursing staff during his or her rotations. In addition, he or she may participate in lectures to the students at various colleges of pharmacy and within the medical center (i.e., perfusion course, pharmacology course, nursing orientation, transplant symposium). The resident will also be expected to precept IPPE and APPE students while on rotation. The program director will facilitate orientation and training of these students.

Travel (Reimbursement)

Out-of-town travel must be requested in advance and approved by the residency program director. A travel authorization form must be submitted to the appropriate personnel as well. The form is located on the K drive in the travel folder. Travel must be supported by receipts, which should accompany the form submitted. The amount of reimbursement must not exceed the amount authorized by the program.

Evaluation

Structured evaluations using ResiTrak® are conducted throughout the residency program to provide feedback regarding both the resident's performance and effectiveness of training. Orientation to ResiTrak® will be conducted during July of each residency year.

It is important to complete these evaluations in a timely manner so that comments are useful for subsequent rotations, both for preceptor and resident. **A "timely manner" is defined as within one week of the completion of the learning experience.** Residents and preceptors should complete their respective evaluations independently and then meet in person within one week of the end of the rotation to discuss the evaluation.

The following scale will be used in ResiTrak® for evaluation of the rotations.

1	Unacceptable performance	Resident is working at a student level; improvement must be demonstrated by the next evaluation
2	Needs significant development	Resident is working at a level that is barely above what one would expect from a student; improvement must be demonstrated by the next evaluation
3	Appropriate progress	Resident is working at a level that is appropriate for this stage in the residency year; there is an expectation that continued improvement will be made
4	Independent	Resident is working independently without the preceptor having to guide each step; preceptor interaction occurs daily or every other day, but is not needed multiple times/day
5	Achieved for the residency	Resident is working not only independently, but needs minimal oversight; preceptor could be out of office and the resident could fill the void in providing service at an acceptable level

The following scale will be used in ResiTrak® for evaluation of preceptors:

- Always
- Frequently
- Sometimes
- Never

Evaluations are of several types:

1. Informal, verbal communications between residents and preceptors should occur on a frequent (i.e. daily) basis. Documentation of these communications is not expected. These communications are important for early detection and resolution of problems and for identification (and mutual acceptance) of problems which **cannot** be resolved.
2. Mid-rotation evaluations are optional, but encouraged, at least in a limited way (i.e. snapshot) through ResiTrak®. Evaluations are required at the end of each rotation (summative), as well as preceptor and learning experience evaluations, through ResiTrak®. Residents will also do a self-evaluation after each rotation. These online evaluations form the basis of a private evaluation session held with the resident and preceptor (and, if necessary, the RPD) to formally review the resident's performance and the rotation's effectiveness. It is imperative that these evaluations are completed on the last day of each rotation or within the following week. *It is the responsibility of both the preceptor and the residents to accomplish this.* For rotations of two weeks duration or shorter, a mid-rotation evaluation is not necessary. All evaluations through ResiTrak® are maintained by the RPD for ongoing review and appropriate feedback and counseling to both residents and preceptors.
3. Quarterly evaluations will be performed with the RPD, each resident and his/her mentor throughout the year. The RPD will review the rotation evaluations for each rotation completed during the quarter, as well as, other information pertaining to ongoing responsibilities such as resident's research project, quality

assurance/improvement projects, weekend responsibilities, etc. In addition, each resident will fill out a self-evaluation every quarter. The RPD will meet with the resident and his/her mentor, to discuss the resident's progress each quarter and determine whether he/she is meeting goals for the year.

Residents' Self-Evaluation of Their Attainment of Goals and Objectives

1. Residents will complete the same summative evaluation instruments as the preceptors at the end of each learning experience or at quarterly intervals for longitudinal learning experiences.
2. Residents will complete the same formative evaluation instruments completed by preceptors on the same schedule.
3. Residents will check the appropriate rating to indicate progress during the learning experience, and should provide narrative comments for selected goals as appropriate. Not all goals need to be commented on, but comments should be included for at least 50% of the goals assessed during the rotation. *Comments should not be simply a list of accomplished activities, but should include self-awareness of improved/altered performance based on rotation experiences and/or feedback from the preceptor or others on the rotation. Comments such as "I was encouraged to check on lab results twice daily and this allowed me to intervene on medication use issues in a more timely fashion" are a good example of what should be documented in a self-evaluation.*
4. Residents must have evaluation instruments completed to be used in evaluation sessions with preceptors. They will be reviewed and discussed with preceptors, and should be signed and dated by the resident and the preceptor.
5. Evaluations will be done in a timely manner (i.e. within week of the end of the learning experience).

Residents' Evaluation of the Preceptor and Learning Experience

1. Residents will complete evaluations within one week of the end of each learning experience or quarterly for longitudinal learning experiences.
2. Completed evaluations will be discussed with preceptors, and signed and dated by each.
3. Completed, signed evaluations will be forwarded to the residency RPD for review.

Evaluations that contain an undue number of "1" or "2" scores or have a distinct imbalance between how the preceptor feels the resident has done and how the resident self-evaluates the experience, shall be red flags to further discuss the issues that may be preventing the resident from being successful on the particular learning experience and the remainder of the residency. Action plans to address problem areas will be developed and implemented as soon as possible. There should be no documentation of "1" or "2" scores in the second half of the residency year.

Resident Dismissal Policy

Residents are expected to conduct themselves in a professional manner and to follow all pertinent university, medical center and departmental policy and procedures.

A resident may be dismissed from the residency if he/she:

- fails to present themselves in a professional manner
- fails to follow policies and procedures
- fails to get licensed by the date that is reflected in the departmental policy on licensure (November 1st)
- fails to perform at a level consistent with residency expectations (*i.e. failure of 2 required rotations*)

If any of the above situations occur, the appropriate disciplinary actions will be taken. The normal steps in a disciplinary action process are as follows:

1. Residents will be given verbal counseling by their advisor*, primary preceptor or RPD if they fail to meet the above requirements for the first time. They will be counseled on the actions necessary to rectify the situation involved.

The remedy or disciplinary actions will be decided solely by the involved residency advisor, primary preceptor or RPD. This verbal counseling will also be documented in their personnel file by the involved residency advisor, primary preceptor or RPD. The residency advisor and Corporate Director must be informed of the action if they are not directly involved.

2. If a resident fails to correct his/her behavior, the RPD and the advisor will meet together and jointly decide an appropriate disciplinary action against the resident (such as an additional project, removing from certain activities or working after normal hours, etc.) This action will be documented again in the personnel file and will be immediately communicated to the Clinical Specialists group and Corporate Pharmacy Director. No approval is required from the Clinical Specialists group if the disciplinary action does not affect the Hospital Service. If the disciplinary action would affect Hospital Services, the appropriate service managers should be consulted and the action be first approved by the Clinical Specialist group.

3. If a resident still fails to correct his/her behavior or meet the specific disciplinary action requirement, the RPD and the advisor can jointly recommend the resident be withdrawn from the program. This action will require the approval of the Clinical Specialists and the Corporate Pharmacy Director. The Adult Transplant Clinical Specialists will first review the recommendation. If they agree with the recommendation, it will be forwarded to the RPD and Pharmacy Director. No action of dismissal will be taken against the resident until the final approval of these two individuals.

4. If the RPD feels that the action recommended by the residency advisor/RPD and approved by the Clinical Specialists is appropriate, then the disciplinary action of dismissal will be taken by the Corporate Pharmacy Director and RPD.

**Residency “advisor” could be resident’s mentor, main project preceptor, or other individual who has established a positive relationship with the resident.*

Successful Completion of Residency

The PGY2 transplant resident must complete the following activities in a manner that is acceptable to the RPD and any pertinent residency preceptors, prior to receiving the certificate reflecting the successful completion of the residency program.

All RLS goals and objectives that are indicated as “R” are required to be evaluated at some point during the residency year. However, there are some goals that Rush has identified as being required for successful completion of the residency.

1. The following goals and objectives from the accreditation standard must be achieved by the Rush resident. Achievement is defined as the consensus of the Clinical Specialists that the resident has successfully met these goals and objectives (a “5” on the Resitrak evaluation scale, or ACHR):

<i>Outcome R1: Serve as an authoritative resource on the optimal use of medications in recipients of a solid organ transplant.</i>	
R1.1	Establish oneself as an expert for transplant pharmacy-related information and resources.
R1.2	Lead the modification or development and implementation of medication-related guidelines or protocols for transplant patient care.
R1.3	Provide concise, applicable, comprehensive, and timely responses to formal or informal drug information requests pertaining to the care of transplant patients.

R1.4	Develop a core library appropriate for transplant pharmacy practice.
R1.6	Contribute to clinical, humanistic and/or economic transplant outcomes research.
Outcome R2: Optimize the outcomes of transplant patients by promoting and/or providing evidence-based medication therapy as an integral member of an interdisciplinary team in acute and ambulatory care settings.	
R2.1	Establish collaborative professional relationships with members of interdisciplinary health care teams involved in the care of transplant patients.
R2.2	Contribute to the pre-transplant evaluation of transplant candidates.
R2.4	Establish collaborative relationships between the pharmacist and transplant patients and/or caregivers.
R2.5	Collect and analyze patient information.
R2.7	Design evidence-based therapeutic regimens for transplant patients.
R2.8	Design evidence-based monitoring plans for management of transplant patients.
R2.9	Communicate medication regimen recommendations and monitoring plans for transplant patients to relevant persons.
R2.10	Implement regimens and monitoring plans.
R2.11	Evaluate transplant patients' progress and redesign medication regimens and monitoring plans as indicated by their clinical course.
R2.12	Communicate ongoing patient information to relevant persons.
R2.13	Document direct patient care activities appropriately.
Outcome R3: Manage and improve the medication-use process in transplant patient care areas.	
R3.1	Serve as an organizational resource for knowledge about the proper preparation, distribution, and administration of transplant-related medications.
R3.2	Identify potential opportunities for improvement relating to aspects of the organization's medication-use system affecting transplant patients.
Outcome R4: Demonstrate leadership and practice management skills.	
R4.1	Exhibit the ongoing development of essential personal skills of a practice leader.
R4.2	Contribute to the leadership and management activities within the transplant pharmacy practice area.
Outcome R5: Demonstrate excellence in the provision of training or educational activities about transplant-related medications for health care professionals and health care professionals in training.	
R5.1	Provide effective education or training about transplant-related medications to health care professionals and those in training.
Outcome R6: Conduct transplant research.	
R6.1	Conduct a transplant research project using effective project management skills.

2. Successful completion of the residency research project
 - a. The research project must be presented in a final written form, manuscript format, to the RPD and the residency research advisor (if different) AND be acknowledged as successful, prior to receiving the residency certificate
3. Successful completion of DUE assignment

4. Successful completion of all required presentations, including presentation at Great Lakes Pharmacy Residency Conference
5. End of year summary of resident activities

Research Project

IRB

The resident will complete IRB training during orientation. See Research Project section for IRB requirements and due dates.

Each resident is expected to complete a major project, producing a paper of publishable quality. The residents are urged to submit the paper for publication in an appropriate journal. *See an example research proposal as provided in Appendix B*

a. Objective

The objective of the project is for the resident to learn to investigate a question or problem in an objective, scientific manner. Their project should also provide answers or data that will ultimately contribute to the progress and development of the Department or the profession at large.

b. Scope of Project

The project may involve any area of hospital pharmacy practice that has a reasonable potential of contributing to the profession's knowledge, if an advisor in the field is available and willing to advise the resident. It is desirable that the project address a clinical problem. It must be feasible to complete the project within the one-year residency appointment.

A meeting in July will be arranged with the residency's preceptors to present project ideas.

c. Major Project Proposal

A concise project proposal on an appropriate topic must be submitted and approved before any major project may be conducted. An appropriate consenting major project advisor should be proposed.

Project proposals will be presented to the Adult ICU preceptors and Pharmacy Department for feedback prior to finalization. This will occur in late August/early September.

The project proposal should be developed as early as possible and submitted to the project advisor and the RPD **no later than August 31st**.

Please see file folder on the shared K drive labeled “residency research project resource guide” within the Resident s folder: K/Residents/IRB documents

Sample proposals are available for review from the RPD and on the K drive

The following format should be followed for the proposal (and paper):

- ✓ Goal—a clear explanation of the question/problem and purpose of the project.
- ✓ Objectives—a listing of the specific objectives to be met by the project
- ✓ Methodology—a description of the hypotheses, experimental design, data collection, analysis, and evaluation methods.
- ✓ Resource needs—the fiscal/personnel/physical resources required to satisfy methodology.
- ✓ Patient consent forms (*if applicable*)—patient consent forms should be drafted for studies directly involving patients according to recommendations of the Human Investigation Committee.
- ✓ Bibliography—should be listed to reflect literature search leading to identification of project problem, general purposes, or hypotheses.
- ✓ Literature review—a brief synopsis of a preliminary literature review.

d. Final manuscript format

i. Introduction

This section should include background justification for the research project. Articles and case reports addressing prior research or information pertaining to the subject reviewed and referenced. The goal of the research project should be clearly stated.

ii. Methodology

The subjects, materials and methods should be clearly outlined in a manner so that any investigator might follow the protocol.

Under the “Subject” subsection, specific inclusion and exclusion criteria should be listed. Age or gender restrictions should be clearly indicated. Whether patients or normal volunteers are the subjects should be noted.

Under “Materials and Methods” exact methodology, specific equipment and statistical analysis should be explained. The “Methods” should address the type of study (i.e. randomized, crossover, blinded) as well as the method of drug administration, including time, route, and dose; any dietary or medication restrictions; timing of serum samples (if any); assessment criteria; handling of side effects; duration of study (single-dose vs. multiple dose; one day vs. weeks or months). Equipment being used and/or assay methodology should be described, including the specificity for the drug(s) being measured and the sensitivity of the assay. The “Statistical Analysis” subsection should describe the statistical test(s) to be employed to describe the group(s) and to assess statistical significance between groups.

iii. Results

The results of the study should be described but not discussed. Tables and figures should be included.

iv. Discussion

The results should be explained and compared and contrasted with current literature. Conclusions should be listed at the end.

v. **Bibliography**

The bibliography should list the references that serve as background information on the chosen topic. It should include articles or references pertaining to previous research on the drug(s) being investigated, materials and methods, statistical analysis, and patient population.

Appendix A

Dates to Know

Anticipated due date	Task
July 31 st	Select a residency project
August 15 th	Complete first draft of residency project proposal
August 31 st	Present background and methods of residency project to pharmacy staff and preceptors
September 1 st	Submission of research project to IRB
October 1 st	Begin data collection
Jan 15 th	Completion of data collection
Jan 31 st	Submit abstract to GLPRC
April 1 st	Completion and submission of slides for GLPRC
April	Present completed research project/GLPRC slide set pharmacy staff and preceptor for feedback
May 15 th	Submit a draft of project manuscript
June 1 st	Submission of project manuscript to project preceptor and residency program director

Appendix B

Research Proposal

I. Title

II. Primary Investigators

Gourang Patel, Pharm.D., BCPS

III. Advisors

IV. Abstract

The objective of this study is to.....

V. Introduction

VI. Methods

i. Trial Design

We will perform a....

ii. Participants

This study will include patients.....

iii. Outcomes

The primary outcome of this study is to assess.....

Secondary outcomes of interest include.....

iv. Sample Size

v. Implementation

i. Eligible/Ineligible

vi. Statistical Methods

i. Primary Endpoint

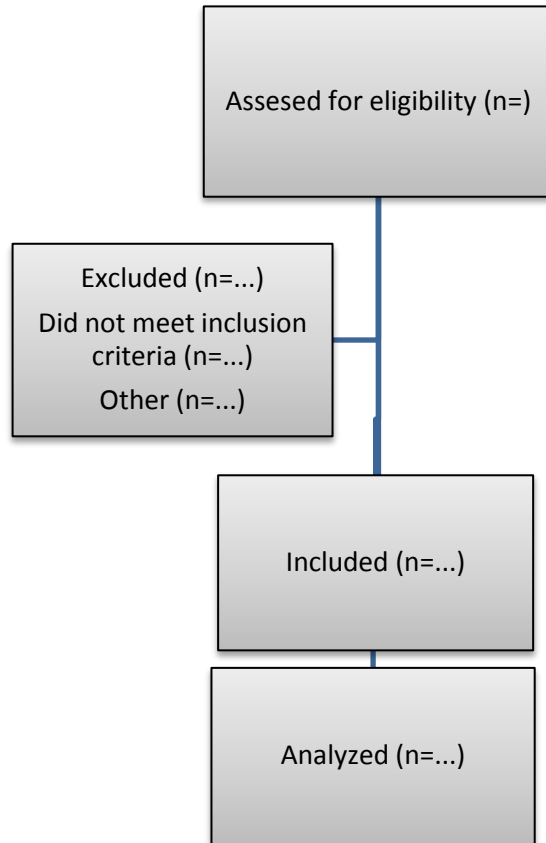
ii. Secondary Endpoints

VII. Results

i. Participant Flow

See Figure 1.

Figure1. Flow diagram



References

Appendix C

Didactic discussions, reading assignments, case presentations, written assignments, and direct patient care experience will allow the critical care resident to understand and appreciate the implications of medication therapy on the following areas of emphasis as listed below.

The PGY2 CC resident is provided this spreadsheet to ensure the topics listed are covered throughout the PGY2 CC residency year. After completion of a topic, the resident and preceptor need to sign off the date of completion.

Topic	Rotation	PGY2 CC resident	Preceptor	Date
Pulmonary <ol style="list-style-type: none"> 1. Acute respiratory distress syndrome/acute lung injury 2. Status asthmaticus 3. Acute COPD exacerbation 4. Pulmonary embolism 5. Pneumothorax and hemothorax 6. Drug-induced pulmonary diseases 				
Cardiovascular <ol style="list-style-type: none"> 1. Arrhythmias 2. Pulmonary edema/congestive heart failure exacerbations 3. Acute coronary syndromes 4. Hypertensive emergencies 5. Acute aortic dissection 6. Pericardial tamponade 7. Shock and related problems <ol style="list-style-type: none"> a. cardiogenic b. septic c. hypovolemic/hemorrhagic d. anaphylactic e. neurogenic (spinal) 				
Renal <ol style="list-style-type: none"> 1. Acute renal failure 2. Acid-base imbalance 3. Fluid and electrolyte disorders 4. Rhabdomyolysis 5. Contrast-induced nephropathy 6. Drug-induced kidney diseases 				
Neurology <ol style="list-style-type: none"> 1. Status epilepticus 2. Intracranial pressure management 3. Traumatic brain injury 4. Ischemic stroke 5. Subarachnoid hemorrhage 6. Intracerebral hemorrhage 				

<ul style="list-style-type: none"> 7. Spinal cord injury 8. Critical illness polyneuropathy 9. Diabetes insipidus 10. Syndrome of inappropriate antidiuretic hormone 11. Cerebral salt wasting 				
<p>Gastrointestinal</p> <ul style="list-style-type: none"> 1. Acute upper and lower gastrointestinal bleeding 2. Severe pancreatitis 3. Fistulas 4. Ileus 				
<p>Hepatic</p> <ul style="list-style-type: none"> 1. Liver failure 2. Hepatorenal syndrome 3. Complications of cirrhosis 4. Drug-induced liver diseases 				
<p>Dermatology</p> <ul style="list-style-type: none"> 1. Burns 2. Stevens Johnson syndrome 3. Toxic epidermal necrolysis 4. Erythema multiforme 				
<p>Immunology</p> <ul style="list-style-type: none"> 1. Acute transplant rejection 2. Graft-versus-host disease 3. Systemic inflammatory response disease (SIRS) 				
<p>Endocrine</p> <ul style="list-style-type: none"> 1. Relative adrenal insufficiency 2. Diabetic ketoacidosis/nonketotic coma 3. Thyroid storm/ICU hypothyroid states 4. Hypoglycemia & hyperglycemia 				
<p>Hematology</p> <ul style="list-style-type: none"> 1. Coagulopathies 2. Drug-induced hematologic disorders 3. Drug-induced thrombocytopenia 4. Anemia of critical illness 5. Blood loss and blood component replacement 				
<p>Psychiatry</p> <ul style="list-style-type: none"> 1. ICU psychosis 2. Sleep disturbances 3. Neuroleptic malignant syndrome 4. Substance abuse /alcohol withdrawal syndromes 				

<p>Infectious Diseases</p> <ol style="list-style-type: none"> 1. CNS infections 2. Complicated intra-abdominal infections 3. Infections in the immunocompromised host 4. Pneumonia 5. Endocarditis 6. Sepsis 7. Wound infection 8. ICU fever 				
Pharmacokinetics and Pharmacodynamics				
Toxicological emergencies				
Bioterrorism and Mass Casualty Events				
<p>Nutrition</p> <ol style="list-style-type: none"> 1. Enteral nutrition 2. Parenteral nutrition 3. Nutrition considerations in special patient populations 4. Immune-modulation 				
Analgesia				
Sedation				
Delirium				
Neuromuscular blocking agents (rapid sequence intubation, ICU paralysis)				
Venous thromboembolism prophylaxis				
Stress ulcer prophylaxis				
Bowel regimens				
<p>Devices</p> <ol style="list-style-type: none"> 1. Intravascular devices 2. Mechanical ventilation 3. Continuous renal replacement therapies 4. Chest tubes 5. Sequential compression devices 6. Intra-arterial balloon pumps and LVADs 7. Ventriculostomies 8. Peripheral nerve stimulators 9. Bispectral index 				
<i>Pediatric and Neonatal Considerations (optional)</i>				