

University of Utah Health Care Hospitals and Clinics
PGY1 Pharmacy Residency
Salt Lake City, UT

Rotation Name: Solid Organ Transplant (Transitions of Care)

Rotation Preceptors: Lonnie Smith, Pharm.D., FAST; Crystal Truax, Pharm.D., BCPS; Bhanupriya Sirandas, Pharm.D., BCPS; Adrian Carlson, Pharm.D., BCPS; Debra Ramirez, Pharm.D., BCPS

Duration: 4 weeks

Site Description: The solid organ transplant rotation offers both inpatient and ambulatory exposure to kidney, pancreas, liver, heart and lung transplant. The resident will have the unique opportunity to participate in transitions of care from pre-transplant evaluation, post-surgical care, discharge counseling, and post-transplant clinic follow-up. Practice sites include surgical and medical intensive care units, general medicine and surgical floors, and outpatient transplant clinics. Outpatient clinics may include:

- Adult Kidney and Pancreas Pre- and Post-transplant
- Adult Liver Pre- and Post-transplant
- Adult Heart Pre- and Post-transplant
- Adult Lung Pre- and Post-transplant

The transplant pharmacists operate as an integral part in the multidisciplinary transplant team that includes attending physicians, transplant surgeons, fellows, residents, nurse practitioners/physician assistants, nurse coordinators, social workers, financial counselors, and other important team members. Care of transplant patients is multifaceted and patients often have several comorbidities that expose the resident to different areas of internal medicine including, but not limited to, infectious disease, diabetes, and cardiology. A role of a transplant pharmacist includes evaluating patients for transplant in the pre-transplant phase, rounding with the multidisciplinary team in the inpatient setting, completing medication education with transplant recipients and reviewing appropriateness of therapy, medication compliance, adverse drug reaction and labs based on transplant guidelines.

Rotation Description: The primary focus of the rotation is for the resident to develop a comprehensive approach strategy to patient care. The resident will be responsible for direct patient care of post-transplant patients in both the inpatient and outpatient setting. Topics stressed include monitoring and management of immunosuppressive agents including toxicities and interactions, proper management and control of opportunistic infections, and prevention and treatment of rejection. By the end of the rotation the resident should have a strong understanding of transplant pharmacotherapy and current limits to graft and patient survival. By the end of the rotation, the resident will be expected to participate in transplant rounds, to efficiently work-up a patient in the outpatient setting and to complete a patient discharge counseling session.

The resident will also have the opportunity to participate in clinical research and transplant evaluation meetings, and may have the opportunity to aid in management of investigator-initiated and multicenter clinical trials. Weekly topic discussions will be held on a routine basis with the clinical pharmacists and transplant resident. Additional opportunities include journal club presentations and presentations to pharmacy and transplant staff. The resident may also have the opportunity to observe a transplant surgery, if desired.

RLS goals to be evaluated:

- R1.1 – In collaboration with the health care team, provide safe and effective patient care to a diverse range of patients, including those with multiple comorbidities, high-risk medication regimens, and multiple medications following a consistent patient care process
 - R1.1.1 (Applying) Interact effectively with health care teams to manage patients' medication therapy
 - R1.1.2 (Applying) Interact effectively with patients, family members, and caregivers

- R1.1.3 (Analyzing) Collect information on which to base safe and effective medication therapy
- R1.1.7 (Applying) Document direct patient care activities appropriately in the medical record or where appropriate
- R1.2 – Ensure continuity of care during patient transitions between care settings
 - R1.2.1 (Applying) Manage transitions of care effectively
- R3.1 – Demonstrate leadership skills
 - R3.1.1 (Applying) Demonstrate personal, intrapersonal, and teamwork skills critical for effective leadership
- R4.1 – Provide effective medication and practice-related education to patients, caregivers, health care professionals, students, and the public (individuals and groups)
 - R4.1.2 (Applying) Use effective presentation and teaching skills to deliver education

Solid Organ Transplant Rotation Activities and Teaching Methods Linked to Objectives

Rotation Activity	Teaching Method(s)	Objective
At minimum, conduct 5 thorough patient interviews to determine current drug therapy and relevant medication history. <ul style="list-style-type: none"> ● Evaluate medication therapy for post-transplant recipients in ambulatory and inpatient settings ● Identify medication-related problems ● Communicate recommendations for modifying drug therapy directly to the provider 	Modeling Coaching Facilitating	R1.1.1 Interact effectively with health care teams to manage patients' medication therapy R1.1.2 Interact effectively with patients, family members, and caregivers R1.1.3 Collect information on which to base safe and effective medication therapy
Round with transplant team, and individual medical and surgical teams when appropriate. In doing so, provide recommendations to the team regarding medication therapy issues, based on analysis and assessment of collected information.	Modeling Coaching Facilitating	R1.1.1 Interact effectively with health care teams to manage patients' medication therapy R1.1.3 Collect information on which to base safe and effective medication therapy
Provide effective discharge counseling for at least one newly transplanted patient with appropriate documentation, including information to help with pharmacist pass off for efficient transition of care.	Direct instruction Modeling Coaching Facilitating	R1.1.7 Document direct patient care activities appropriately in the medical record or where appropriate R1.2.1 Manage transitions of care effectively R4.1.2 Use effective presentation and teaching skills to deliver education
Establish a working relationship with transplant multidisciplinary team, including physicians, nurses, and others to effectively manage transplant patients medication.	Modeling Coaching Facilitating	R3.1.1 Demonstrate personal, intrapersonal, and teamwork skills critical for effective leadership
Minimally present at least one each of the following to the transplant team:	Modeling Coaching Facilitating	R4.1.2 Use effective presentation and teaching skills to deliver education

Revised June 25, 2018

<ul style="list-style-type: none"> • “Lunch and Learn” in-service • Topic discussion <p>All presentations should be appropriate for the intended audience, with a handout to reinforce key concepts, and inclusive of relevant and up to date information.</p>		
<p>Participate in the education and assessment of pre-transplant patients</p> <ul style="list-style-type: none"> • Attend and then present medication education during pre-transplant patient education session • Evaluate a pre-kidney transplant patient for consideration of listing based on pharmacologic criteria 	<p>Modeling Coaching Facilitating</p>	<p>R1.1.2 Interact effectively with patients, family members, and caregivers</p> <p>R1.1.7 Document direct patient care activities appropriately in the medical record or where appropriate</p> <p>R1.2.1 Manage transitions of care effectively</p> <p>R4.1.2 Use effective presentation and teaching skills to deliver education</p>

Expectations

- On non-clinic days, inpatients will be worked up and ready for discussion with preceptor prior to 10 AM. If able, round individually on all patients prior to this meeting.
- Patient care is a priority throughout the day. The rotation will begin and end daily based on patient care related responsibilities or rotation related projects.
- Plans will be communicated with preceptor prior to implementation, including recommendations for immunosuppressive drug monitoring.
- Communicate plan of care and changes in therapy as appropriate with floor/central pharmacists.

Orientation

- Your preceptor will meet with you on the first day of rotation to make an individual orientation plan with you.

Expected Progress

Day 1: Preceptor will orient resident to the rotation, health care professionals, and workflow. Preceptor will review learning activities and expectations with resident

- Resident should come ready to discuss resident progress to date, areas of excellence and areas of improvement needed, and goals for the rotation
- The resident is expected to be punctual, professional and prioritize daily activities throughout rotation with a focus on exceptional patient care.
- Residents must complete readings provided by preceptors prior to starting the rotation

Week 1:

- Resident will start by working up 2-4 patients and progressing to work up additional patients by the end of the first week.
- Resident must present patients to preceptor each day in an organized way.
- Resident will model the preceptor for participation in team rounds, as well as their role on the health care team.
- Resident will learn processes for documenting pertinent pharmacist-related issues in electronic medical records.

Revised June 25, 2018

- Topics are due to preceptors for journal club, lunch and learn presentation and topic discussion

Week 2:

- Resident will work up patients with the goal of covering majority of the patients by the end of the week as assigned by preceptors
- Preceptor is still on the unit and available for questions.
- The resident will continue to work on modeling behaviors.
- Expect daily patient reviews.
- The resident will begin to provide independent pass off to the evening pharmacist.
- Resident will write pertinent and accurate notes, with preceptor provided feedback for each patient they are responsible.

Week 3:

- Resident to take on more responsibilities as the primary pharmacist on the team.
- Retain and build on knowledge and skill in developing evidence-based practice
- Create a treatment plan for each assigned patient daily
- Identify modifications in treatments based on changing patient status
- Presentation/project drafts to be submitted for edit.
- Document pass off and transitions of care notes accurately
- Follow-up on all daily recommendations

Week 4:

- Resident is expected to work up all patients as assigned by preceptors
- Resident expected to write pertinent notes on all patients.
- Continue to discuss identified problems with preceptor daily.
- All presentations and project documents or revisions will be due no later than the next to the last day of residency.
- Resident should function at the level of an independent clinician by the last day
- Complete all presentations and projects to the expectations set by the preceptor and turn in electronic copies to the preceptor by the last day of rotation

Presentations

- Pre-transplant kidney patient education (observe ≥ 1 session prior)
- One "lunch and learn" presentation Topic: Resident's Choice
- One formal topic discussion Topic: Resident's Choice
- One 10-min journal club discussion Topic: Resident's Choice

Projects

- Help with on-going transplant pharmacy projects

Optional activities

- Observe a kidney transplant: Date TBD
- Observe a kidney transplant biopsy: Date TBD

Core discussion topics

- Immunology
- Immunosuppressive agents
 - Induction
 - Maintenance
- Infections

Revised June 25, 2018

- Post-transplant prophylaxis
- Opportunistic infections
- Immunizations
- Acute and chronic rejection
- Long-term complications
- Elective topics led by the resident
- Additional topics determined by the resident/preceptors

Evaluations

- Evaluations will be documented in PharmAcademic™. At the midpoint of the evaluation, the preceptor will evaluate the resident. At the end of the rotation, the resident will self-evaluate, the preceptor will evaluate the resident, and the resident will evaluate both the preceptor and the learning experience.

Suggested readings

- Halloran PF. Immunosuppressive Drugs for Kidney Transplantation. *NEJM* 2004;351:2715-29.
- Hardinger K, Koch M, Brennan D. Current and Future Immunosuppressive Strategies in Renal Transplantation. *Pharmacotherapy* 2004;24(9):1159-1176.
- Soave R. Prophylaxis Strategies for Solid Organ Transplantation. *CID* 2001;33(S1).
- Danovitch GW. *Handbook of Kidney Transplant*. Lippincott Williams & Williams. 2010.
- Fishman J. Infection in Solid-Organ Transplant Recipients. *NEJM* 2007;357(25):2601-14.
- Kidney Disease: Improving Global Outcomes (KDIGO) Transplant Work Group. KDIGO clinical practice guideline for the care of kidney transplant recipients. *Am J Transplant* 2009;9(Suppl 3):S1-155.
- Allen U, Humar A, Limaye A et al. *Infectious Diseases Guidelines, 2nd Ed.* *Am J Transplant* 2009;9(Suppl 4):S1-281.
- Alloway RR, Dupuis R, Gabardi S, et al. Evolution of the Role of the Transplant Pharmacist on the Multidisciplinary Transplant Team. *Am J Transplant* 2011;11:1576-1583.
- Maldonado AQ, Tichy EM, Rogers CC, et al. Assessing Pharmacologic and Nonpharmacologic Risk in Candidates for Kidney Transplant. *Am J Health-Syst Pharm* 2015;72:781-93.