RUSH UNIVERSITY MEDICAL CENTER

Department of Pharmacy
PGY2 Solid Organ Transplant Residency Program Manual (abbreviated)
2024-2025

The Solid Organ Transplant PGY2 Residency Program is an ASHP-accredited one year residency established to provide specialty training for residents interested in solid organ transplant. The PGY2 program at Rush has one PGY2 solid organ transplant resident and additional PGY2 residents in critical care, emergency medicine, pediatrics, internal medicine, oncology and health system pharmacy administration and leadership.

Purpose Statement: PGY2 pharmacy residency programs build on Doctor of Pharmacy (Pharm.D.) education and PGY1 pharmacy residency programs to contribute to the development of clinical pharmacists in advanced or specialized areas of practice. PGY2 residencies provide residents with opportunities to function independently as practitioners by conceptualizing and integrating accumulated experience and knowledge and incorporating both into the provision of patient care that improves medication therapy. Residents who successfully complete an accredited PGY2 pharmacy residency should possess competencies that qualify them for clinical pharmacist and/or faculty positions and position them to be eligible for attainment of board certification in the specialized practice area.

Goals: The primary goal of the program is to develop independent clinicians with a core set of clinical, teaching and research skills to be able to design and deliver care for solid organ transplant patients. This overarching goal will be completed through exposure to a variety of experiential opportunities where the resident will serve as an integral member of the rounding team by participating in medication therapy management, answering clinical questions and serving as a drug information resource to the healthcare team. Additionally, the clinical experience is supplemented by the resident on-call program, where the resident will provide in-house service for emergency response and drug information. 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.

This 52-week residency program is designed to comply with the published accreditation standards of the American Society of Health-Systems Pharmacists (ASHP).

Program Structure: Rotations will be evaluated using the outcomes, goals and objectives approved by ASHP for the residency program.

Required rotations:

- Orientation (unless this is a retained Rush resident): 4 weeks
- Inpatient Solid Organ Transplant 1: 6 weeks
- Outpatient Solid Organ Transplant 1: 6 weeks
- Surgical Intensive Care Unit (unless completed previously): 4 weeks

- Immunocompromised Infectious Disease Consult Service: 4 weeks
- Transplant Nephrology: 4 weeks
- Transplant Hepatology: 4 weeks

Elective rotations:

- Pediatric Transplant (off-site): 2 weeks
- Heart/Lung Transplant (off-site): 4 weeks
- Research and Medical Writing: 2-4 weeks
- Quality Assurance and Performance Improvement: 2-4 weeks
- Academia: 2 weeks
- Inpatient Solid Organ Transplant 2: 6 weeks
- Inpatient Solid Organ Transplant 3: 6 weeks
- Outpatient Solid Organ Transplant 2: 6 weeks
- *Repeat of any of the required rotations*
- *Additional experiences may be arranged based on resident interest and service availability*

Required longitudinal obligations

- Clinical and operational staffing (8-hour shifts Saturday & Sunday every 4th weekend for 52 weeks)
- In-house on-call program (in rotation with other residents for 52 weeks)
- Primary research project (52 weeks)
- Grand Rounds Presentations (2)

Typical Monthly Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Rotation service **On-call**	2 **Post-call**	3 Rotation service	4 Rotation service	5 Rotation service	6 **SOT Staffing**
7 **SOT Staffing**	8 Rotation service	9 Rotation service	10 Rotation service	11 Rotation service	12 Rotation service	13 Off
14 Off	15 Rotation service	16 Rotation service **On-call**	17 **Post-call**	18 Rotation service	19 Rotation service	20 Off
21 Off	22 Rotation service	23 Rotation service	24 Rotation service	25 Rotation service	26 Rotation service	27 Off
28 **On-call**	29 **Post-call**	30 Rotation service				

Residency Program Requirements:

Participation in Orientation: This 4-week training (if PGY1 Pharmacy Practice Residency not completed at RUMC). consists of general orientation to the RUMC as weekend staffing and overnight on-call components. This rotation is monitored through the completion of a competency checklist determined for each area. An onboarding policy and procedure checklist will also be completed during orientation month. The resident must submit their certificate after successful completion of PGY1.

Required activities for completion of the PGY2 Solid Organ Transplant Resident:

- One formal research project with manuscript of publishable quality
- ACPE-accredited pharmacy grand rounds presentations (2)
- Overnight on-call program
- Pharmacy service (transplant staffing)
- Maintenance of residency project materials [electronic notebook]

Optional activities of the PGY2 Solid Organ Transplant Resident:

- Medication Utilization Evaluation (MUE), as available
- Development or update of a practice guideline or policy related to solid organ transplant, as available
- Drug monograph, as available
- Teaching certificate program (if not completed during PGY1 program)
- Transplant committee membership and attendance
- Presentation of MUE results or longitudinal research at professional meeting
- Involvement in a national organization committee (AST or ACCP)
- Volunteer activity (Rush departmental/hospital volunteer activities, etc.)
- Department wellness events
- Precept IPPE, APPE and PGY1 pharmacy residents

Committee Assignments: The resident will be assigned to one committee for the year (see list below). The resident will be expected to attend regularly scheduled meetings of the assigned committee.

- Transplant Quality Improvement Committee (TQIC)
- Kidney Quality Improvement Committee (KQIC)
- Liver Quality Improvement Committee (LQIC)

Department Meetings: The resident is expected to attend all departmental staff meetings, unless excused by the residency program director.

Pharmacy Grand Rounds: Pharmacy Grand Rounds are held weekly. The resident presenting will rotate through all residents. Advance notice to the Pharmacy Department is expected by the resident of their grand rounds so that attendance is optimal. PharmAcademic is used to provide preceptor feedback.

Residency Advisory Committee: The Residency Advisory Committee (RAC) is comprised of the PGY1 Residency program director, PGY2 Residency program directors, a subset of clinical specialists, Associate

Director of Clinical Services and the Chief Resident. 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
- Formal program assessment and evaluation (including end of year)
- Assist with any other issues which program directors deem necessary

Staffing Requirements: The resident will be required to work two 8-hour staffing shifts every fourth weekend in addition to the on-call requirement. 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, Martin Luther King Jr. Day). The assigned location for weekend/holiday staffing will be the solid organ transplant service coverage.

On-Call Program: The resident will be expected to participate in an in-house on-call program in rotation with the other 1st and 2nd year pharmacy residents. This will include being in the hospital for 24 hours followed by a day off before returning to the hospital the following day (on call 5 pm-7 am on weekdays or 7 am-7 am on weekends and holidays, then a day off, and return the following day for rotation). During each on-call shift, there is a duty-free period that allows the resident a period of time to rest. The in-house, overnight on-call program provides 24/7 clinical pharmacist coverage to the medical center. The on-call program serves both the pediatric and adult population at Rush. Responsibilities during on-call include, but are not limited to: pharmacokinetic drug monitoring, response to drug information questions, emergency response, and approval of adult restricted antimicrobials. Expectations and an in-depth orientation for overnight on-call will be provided in July.

Overtime/Duty hours (Moonlighting): Residents are expected to commit their full professional attention to the residency. Working in other positions outside the Department are not permitted. Residents may consider picking up open shifts within the Rush Department of Pharmacy, if approved by the RPD first. The limit of duty hours is consistent with ASHP accreditation and ACGME terms that went into effect in July of 2013. The hours at the hospital in the residency program is limited to 80 hours per week, averaged over a 4-week period. Residents must be provided one day in seven free, averaged over a four-week period. Adequate time for rest and personal activities must be provided. This should consist of a minimum of 8 hours, but ideally, a 10-hour time period provided between all daily duty periods. For programs with on-call programs, there should be a minimum of 14 hours free following an on-call shift. This is consistent with the recommendations provided in the ASHP Duty-Hour Requirements for Pharmacy Residencies. The resident will document duty hours monthly utilizing the evaluation tool in PharmAcademic.

Salary: The resident will be paid approximately $52,700.20 annually. Checks are issued every other Friday via direct deposit, which is set up through the payroll department.

Teaching Responsibilities: The resident may be expected to provide in-services to medical and nursing staff during his or her rotations. In addition, the resident may participate in lectures to the students at various colleges of pharmacy and within the medical center (e.g., perfusion course, pharmacology course, emergency medicine grand rounds, advanced nursing critical care course). The resident will also be expected to precept IPPE and APPE students, as well as PGY1 residents while on rotation. The program

director will facilitate orientation and training of these students. Completion of a teaching certificate is optional (if not completed during PGY1 residency training).

Residency Annual Report: The resident may 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. The report can be managed and submitted electronically at the end of the year. The RPD will provide examples of this report.

Residency Notebook: Residents should keep all work completed during the residency program. Examples of documents saved include handouts, PowerPoint presentations, policies, MUEs and drafts of the research projects. Any work that has received critique/feedback should be included in this online notebook, with the documented critique. The RPD will provide instruction on this electronic notebook.

Paid time off/Holidays/Interview Time/CE days: The resident will be entitled to approximately 25 days of paid time off (PTO). It is strongly recommended that the resident take approximately 8-10 days off prior to January 1. This can be taken at any time based on PTO accrual 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.

- The resident will be allotted 5 days for professional meetings (not taken from PTO bank).
- Official hospital holidays will be considered PTO time, unless the holiday falls on the resident's scheduled work weekend/on-call/post-call day.
- The resident is strongly encouraged to use all PTO prior to the end of residency.
- Residents are not permitted to use PTO during the final two weeks of residency unless approved by the residency director.

Professional Attire: Compliance to the department's dress code will be enforced. Scrubs are not permitted on days the resident conducts a formal presentation and are at the discretion of the preceptor. Two lab coats will be ordered for the resident in July.

Professional Meetings: The resident may attend professional meetings as deemed appropriate by the RPD. This can include the AST Transplant Fellow's Symposium, American Transplant Congress, ACCP Annual Meeting or ASHP Midyear Clinical Meeting.

Travel Reimbursement (XM): Out-of-town travel on behalf of the institution or by assignment must be requested in advance and approved by the RPD. Consult the Rush Travel Policy, which outlines the process for travel reimbursement. PGY2 residents are reimbursed up to $1,500 for travel for the residency year. Expenses that will be reimbursed within the defined budget include: lodging, per-diem daily meal allowance (no alcohol), travel (airfare to the meeting and transportation to/from the hotel and airport). Residents should be aware that all expenses may not be reimbursed in full. Residents will submit their own expenses online within 30 days after their return.

Employee enhancement reimbursement (Tuition Manager): Learning Hub will allow each resident $1000 annually (Jan-Dec) to be used towards continuing education programs (e.g., registration for local and national meetings may be submitted for reimbursement). Participants must be employed by Rush for at least 3 months. Applications should be submitted to Tuition Manager within 45 days after the event is complete. Copies of all paid receipts and documentation of proof of attendance is required (i.e. CEU certification, copy event name tag, copy of workbook) and compensation will be provided after the meeting has occurred.

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.

Health Insurance: Access benefit information at: https://www.rush.edu/careers/employee-benefits. The Employee Service Center (312-942-3456) is also available for questions Mon-Fri from 7am to 7pm.

Licensure: All registered pharmacists are required to have their current license by 90 days after the first day of the residency. If the resident does not have pharmacist license by the beginning of the residency, the resident must have a valid Illinois technician license. All residents are expected to be licensed as a pharmacist in Illinois and are encouraged to get their dates for testing as soon as possible. If reciprocation or score transfer is necessary, the procedure should be initiated as soon as possible after graduation from pharmacy school and/or moving to Chicago. The Residency Advisory Committee may consider allowing a 30-day licensure extension. If denied, resident will be demised. If a resident still has not obtained Illinois pharmacist licensure within 120 days from the start of the program, then they will be dismissed from the residency program. Key orientation activities will take place between July 3rd and July 7th; therefore, exams should not be scheduled during that time. A copy of the resident's pharmacist license should be provided to the Administrative Assistant to the Pharmacy Department.

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.

Resident Failure to Progress and 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. The conditions for dismissal and remediation approach for residents failing to progress through the program are outlined in PolicyTech (Pharmacy Resident Failure to Progress and Dismissal Policy) and will be reviewed during orientation.

A resident may be dismissed from the residency if the resident:

- fails to present themselves in a professional manner
- fails to follow policy and procedures
- fails to get licensed by the date that is reflected in the departmental policy on licensure
- fails to perform at a level consistent with residency program expectations (i.e. consistent poor evaluations without evidence of improvement)

Successful Completion of the Residency: Structured evaluations using PharmAcademic will be conducted throughout the residency program to provide feedback regarding both resident's performance and effectiveness of training. Orientation to PharmAcademic 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 a week of the end of the rotation to discuss the evaluation. All required goals and objectives (as indicated by an "R" below) will be taught and evaluated at multiple points and during multiple learning experiences during the residency year. The extent to which these goals and objectives must be achieved for the residency in order to successfully complete the program is outlined below. The resident must complete the following activities in a manner that is acceptable to the program director, residency coordinators and any pertinent residency preceptors, prior to receiving the certificate reflecting the successful completion of the residency program.

1. All required goals and objectives (as indicated by an "R") from the *ASHP Educational Outcomes, Goals, and Objectives for PGY2 Pharmacy Residencies in Solid Organ Transplant* will be taught and evaluated during multiple learning experiences throughout the residency year. The resident must achieve ***100%*** of the R1 Objectives from the accreditation standard
    a. Achievement for the residency (ACHR) for R1 Objectives is defined as achievement of a given goal in **two separate learning experiences** as evaluated by an individual preceptor (a "4" or "5" on the Pharmacademic evaluation scale).
2. The resident must achieve ***80%*** of the Objectives under remaining "R" outcomes
    a. Achievement for the residency (ACHR) for all R2-R4 Objectives is defined as achievement of a given goal in **a single learning experience** as evaluated by an individual preceptor (a "4" or "5" on the PharmAcademic evaluation scale).
3. 100% completion of PharmAcademic evaluations with at least 90% completed within 7 days of the due date
4. Development of a manuscript of publishable quality from the primary research project
5. Completion of longitudinal obligations
    a. Clinical and operational staffing
    b. In-house on-call program
    c. Primary research project
    d. Grand Rounds Presentations (2)
6. Completion of an end of the year summary of residency activities [Electronic Notebook]

Appendix E: PGY2 Solid Organ Transplant Program Core Topics

PGY2 Solid Organ Transplant Resident Core Experiences Tracking Form

The list of topics below represent core areas or diseases that graduates of PGY2 Solid Organ Transplant programs are expected to have adequate knowledge of to provide patient care. The primary method for PGY2 Solid Organ Transplant programs to help residents achieve competence in providing comprehensive medication management is to provide residents with sufficient experience providing patient care for common disease states and conditions. For this purpose, residents are required to have direct patient care experience for topics denoted with an asterisks (*). Core areas that are required and may be covered by direct patient care or by case-based application through didactic discussion, reading assignments, case presentations, and/or written assignments are denoted (†). Elective areas are also listed, but may or may not be covered depending on rotations throughout the year (there is no denotation for elective areas).

Resident instructions: After completion of a topic, it is the resident's responsibility to document completion with the appropriate preceptor's approval.

Preceptor instructions: The preceptor is responsible for ensuring the assigned topics and patient care activities are covered during the rotation period Review the table below for the assigned discussions and patient care activities. When a topic is completed please make sure the completing pharmacist initials and dates the boxes below.

	Disease State Discussion		**Direct Patient Care**	
Topic	Rotation Assigned	Date Completed and Preceptor Initials	Rotation Assigned	Date Completed and Preceptor Initials
Transplant Overview				
History of solid organ transplant and associated outcomes†	1			
Basics of transplant Immunology†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Indications for Kidney Transplantation (Diseases or conditions)				
Diabetic Nephropathy*	Transplant Nephrology		Transplant Nephrology	
Hypertensive Nephrosclerosis*	Transplant Nephrology		Transplant Nephrology	
Membranoproliferative Glomerulonephritis*	Transplant Nephrology		Transplant Nephrology	
Polycystic Kidney Disease†	Transplant Nephrology		Transplant Nephrology	
Systemic Lupus Nephritis*	Transplant Nephrology		Transplant Nephrology	
Focal Segmental	Transplant		Transplant	

Glomerulonephritis (FSGS)*	Nephrology		Nephrology	
Medical/Surgical Contraindications to Transplant	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Indications for Liver Transplantation (Diseases or Conditions)				
Alcoholic Liver Disease*	Transplant Hepatology		Transplant Hepatology	
Non-alcoholic liver disease (NASH)*	Transplant Hepatology		Transplant Hepatology	
Autoimmune Hepatitis*	Transplant Hepatology		Transplant Hepatology	
Hepatitis B†	Transplant Hepatology		Transplant Hepatology	
Hepatitis C*	Transplant Hepatology		Transplant Hepatology	
Hepatocellular Carcinoma (HCC)*	Transplant Hepatology		Transplant Hepatology	
Primary Biliary Cirrhosis (PBC) †	Transplant Hepatology		Transplant Hepatology	
Primary Sclerosing Cholangitis (PSC)†	Transplant Hepatology		Transplant Hepatology	
Medical/Surgical Contraindications to Transplant	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Care for Patients with End Stage Liver Disease	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Indications for Pancreas Transplantation (Diseases or Conditions)				
Diabetes mellitus type 1 and 2*	Abdominal Solid Organ Transplant Inpatient 1		Inpatient Abdominal Transplant 1	
Medical/Surgical Contraindications to Transplant	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Indications for Heart Transplantation (Diseases or Conditions)				
Ventricular Assist Devices-Anticoagulation	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Ventricular Assist Devices-Hemodynamics	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Ventricular Assist Devices-Complications	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Advanced Heart Failure-optimal medication therapy	Heart Transplant/Heart		Heart Transplant/Heart	

management	Failure		Failure	
Advanced Heart Failure-role of inotropes	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Management of HTN post-heart transplant	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Management of hyperlipidemia post-heart transplant	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Management of diabetes post-heart transplant	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Management of atrial fibrillation post-heart transplant	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Management of tachycardia post-heart transplant	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Management of depression post-heart transplant	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Cardiac allograft vasculopathy	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Indications for Lung Transplantation (Diseases or Conditions)				
	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
	Heart Transplant/Heart Failure		Heart Transplant/Heart Failure	
Pre-Transplant Phase				
Pre-transplant evaluation review*	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Pharmacologic Contraindications to Transplant (Relative and Absolute)†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Sensitizing Factors†	Abdominal Solid Organ Transplant		Abdominal Solid Organ Transplant	

	Inpatient 1		Inpatient 1	
Considerations for Induction and Maintenance Immunosuppression (pre-transplant discussions)†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Immunization Recommendations†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Peri-operative Phase				
Basics of Transplant Surgical Procedure†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Organ Procurement†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Organ Preservation Process†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Pre-and Intra-Operative Transplant Pharmacologic Considerations				
Induction Considerations*	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Induction Types*	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Desensitization Strategies†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
ABO-incompatible Transplant Strategies†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Post-transplant Pharmacologic Considerations				
Maintenance Immunosuppression/ Immunomodulation Considerations*	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Calcineurin Inhibitors†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Antimetabolites†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
mTOR Inhibitors†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Co-stimulation Inhibitors†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	

Corticosteroids†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Corticosteroid avoidance/withdrawal/ minimization†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Immunomodulatory agent(s)/ Transplant Drug Development	Abdominal Solid Organ Transplant Inpatient 3		Abdominal Solid Organ Transplant Inpatient 3	
Rejection and Treatment Strategies				
Acute Cellular Rejection*	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Acute Antibody Mediated Rejection*	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Chronic Rejection†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Post-Transplant Infection Considerations¥				
Infection Prophylaxis, Monitoring and Treatment Strategies*	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Surgical Infection Prophylaxis*	Surgical Intensive Care Unit		Surgical Intensive Care Unit	
Adenovirus†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
BK Polyoma Virus Nephropathy (screening and treatment)†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Central Venous Catheter Infections and Treatment Options†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Cytomegalovirus (CMV): Prophylaxis and treatment†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Epstein Barr Virus (EBV)†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Fungal Infections†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
HBV Prophylaxis and Treatment†	Transplant Hepatology		Transplant Hepatology	
HCV Treatment*	Transplant Hepatology		Transplant Hepatology	
Herpes simplex and zoster: prevention and treatment†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Human Immunodeficiency Virus (HIV)†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	

Human papillomavirus (HPV)	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Immunization Recommendations Post-transplant†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Infectious Exposure (Measles, Varicella)†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Mycobacteria†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Nocardia†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Parasites†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Parvovirus B19†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Pneumocystis (prophylaxis and treatment)†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Respiratory syncytial virus (RSV): Prophylaxis and Treatment	Pediatric Transplantation		Pediatric Transplantation	
Sepsis†	Surgical Intensive Care Unit		Surgical Intensive Care Unit	
Tuberculosis†	Immunocompromised Infectious Diseases		Immunocompromised Infectious Diseases	
Urinary Tract Infections/ Pyelonephritis†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Post-Transplant Malignancy Considerations				
Post-transplant lymphoproliferative disease (PTLD)†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Risk of new malignancy or recurrent malignancy†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Lymphoma	Abdominal Solid Organ Transplant Inpatient 3		Abdominal Solid Organ Transplant Inpatient 3	
Kaposi's Sarcoma	Abdominal Solid Organ Transplant Inpatient 3		Abdominal Solid Organ Transplant Inpatient 3	
Skin Cancer (SCC, BCC)	Abdominal Solid Organ Transplant Inpatient 3		Abdominal Solid Organ Transplant Inpatient 3	
Other Post-Transplant Medical Considerations				
Management of Pregnancy in Transplantation†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	

Post-Transplantation Cardiovascular Considerations				
Cardiovascular Risk Management†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Congestive Heart Failure†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Coronary Artery Disease†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Hemodynamic Conditions†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Hyperlipidemia†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Hypertension†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Post-Transplantation Endocrine Considerations				
Post transplantation diabetes mellitus (PTDM)†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Hyperparathyroidism†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Osteoporosis/bone disease†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Metabolic Syndrome†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Gout†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Pediatric Growth Impairment†	Pediatric Transplantation		Pediatric Transplantation	
Post-Transplantation Gastrointestinal Considerations				
Malnutrition/anorexia†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Nausea/Vomiting/Diarrhea†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Post-Transplantation Hematologic Considerations				
Bone marrow suppression	Abdominal Solid		Abdominal Solid	

(anemia, leukopenia, thrombocytopenia)†	Organ Transplant Inpatient 1		Organ Transplant Inpatient 1	
Post-transplant erythrocytosis (PTE)†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Post-Transplantation Hepatic Considerations				
Biliary Complications and Management†	Transplant Hepatology		Transplant Hepatology	
Hepatotoxicity†	Transplant Hepatology		Transplant Hepatology	
Post-Transplantation Neurological Considerations				
Calcineurin Inhibitor Neurotoxicity†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Depression†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Headache†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Neurogenic Bladder†	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	
Post-Transplantation Pulmonary Considerations				
Bronchiolitis obliterans organizing pneumonia (BOOP)†	Lung Transplantation		Lung Transplantation	
Interstitial Pneumonitis†	Lung Transplantation		Lung Transplantation	
Pulmonary Edema†	Lung Transplantation		Lung Transplantation	
Post-Transplantation Renal Considerations				
Acute Tubular Necrosis†	Surgical Intensive Care Unit		Transplant Nephrology	
CNI Nephrotoxicity†	Transplant Nephrology		Transplant Nephrology	
Dehydration†	Transplant Nephrology		Transplant Nephrology	
Electrolyte imbalances†	Surgical Intensive Care Unit		Transplant Nephrology	
Hemolytic Uremic Syndrome/Thrombotic Thrombocytopenic Purpura†	Transplant Nephrology		Transplant Nephrology	
Proteinuria†	Transplant Nephrology		Transplant Nephrology	

Renal Tubular Acidosis†	Transplant Nephrology		Transplant Nephrology	
Surgical/Technical complications				
Bleeding†	Surgical Intensive Care Unit		Surgical Intensive Care Unit	
Ischemia/reperfusion injury†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Obstruction/leak†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Pain and sedation†	Surgical Intensive Care Unit		Surgical Intensive Care Unit	
Primary graft non-function†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Technical graft loss†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Thrombosis prophylaxis and treatment†	Abdominal Solid Organ Transplant Inpatient 1		Abdominal Solid Organ Transplant Inpatient 1	
Hydronephrosis†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Lymphocele†	Abdominal Solid Organ Transplant Inpatient 2		Abdominal Solid Organ Transplant Inpatient 2	
Psychosocial concerns				
Consequences of nonadherence*	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Factors impacting nonadherence*	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Strategies to improve adherence*	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Pediatric to adult transitions of care†	Pediatric Transplantation		Pediatric Transplantation	
Medication and Medical Access (public v. private insurance, patient assistance programs)†	Lung Transplantation		Lung Transplantation	

Organ Allocation				
MELD Score†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Deceased donor waiting list-kidney†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Paired Kidney Exchange†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
National Kidney Registry†	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Lung Allocation Score†	Lung Transplantation		Lung Transplantation	
Heart Transplant Status†	Heart Transplantation		Heart Transplantation	
Transplant regulations and quality assurance/performance improvement				
UNOS/Organ Procurement and Transplantation Network Regulations	Quality Assurance and Performance Improvement		Quality Assurance and Performance Improvement	
Centers for Medicare and Medicaid Services Regulations	Quality Assurance and Performance Improvement		Quality Assurance and Performance Improvement	
Risk Evaluation and Mitigation Strategies	Abdominal Solid Organ Transplant Outpatient 1		Abdominal Solid Organ Transplant Outpatient 1	
Medication Distribution Programs	Abdominal Solid Organ Transplant Outpatient 2		Abdominal Solid Organ Transplant Outpatient 2	