

**TGH SOLID ORGAN TRANSPLANT
ROTATION DESCRIPTION**

Residency Program	Mandatory	Elective	N/A
Hospital		X	
Hospital Oncology		X	
Primary Care			X
HIV (Year 2)		X	

SITE/PRECEPTOR:

Toronto General Hospital: Jennifer Harrison & team

DURATION:

4 weeks

OUTCOMES:

The resident will develop the clinical knowledge, skills, and professional values to:

- A. provide evidence-based patient care as a member of an inter-professional teams
- B. provide medication- and practice-related education
- C. exhibit ability to manage one's own practice of pharmacy

for patients in the Toronto General Hospital Multi-Organ Transplant inpatient unit (focus on kidney transplant recipients).

GOALS and OBJECTIVES:

Please refer to the *UHN/MUHC HIV Advanced (Year 2) Clinical Rotations: Goals and Objectives* document for the overall goals and objectives for this clinical rotation.

In addition, residents will be expected to be able to:

1. describe basic principles of immunology and the immune response as they apply to transplantation.
2. explain immunosuppressive drug regimens, clinically important aspects of immunosuppressive drug therapy, and common post-transplant complications.
3. provide effective pharmaceutical care for de novo and re-admitted kidney transplant recipients through the identification, resolution and prevention of drug therapy problems and development and implementation of pharmacy care plans.
4. establish effective collaborative relationships with the transplant recipient and/or caregivers and the inter-professional transplant team.
5. explain the immune response as it relates to solid organ transplantation in the following areas:
 - allograft recognition
 - cell-mediated immune response
 - humoral immune response
6. identify and describe the factors involved in immunologic risk assessment:
 - ABO antibodies
 - HLA typing

- donor specific antibodies (DSA)
 - panel reactive antibody (PRA) screening
 - cross-matching
7. identify, resolve and prevent drug-therapy problems related to immunosuppressive drug regimens used in kidney transplant recipients.
 8. describe typical immunosuppressive regimens in solid organ transplant recipients including induction and maintenance therapy.
 9. explain the rationale for immunosuppressive drug selection and the indications for use of each agent.
 10. describe living donor and deceased donor kidney transplant protocols and rationale for differences
 11. describe the mechanism of action and pharmacokinetic properties for selected immunosuppressive agents.
 12. recommend dosing regimens and a therapeutic drug monitoring strategy for selected immunosuppressive agents.
 13. interpret drug levels and recommend dose adjustments for immunosuppressive drugs used by the resident's patients.
 14. describe common side effects and their management for selected immunosuppressive agents.
 15. identify common drug interactions encountered in this patient population, assess potential clinical significance of the interaction and recommend an appropriate management strategies.
 16. identify, resolve and prevent common post-transplant drug therapy problems in kidney transplant recipients.
 17. compare acute cellular rejection and acute humoral rejection with respect to the following:
 - immune mechanism
 - risk factors
 - clinical presentation and differential diagnosis
 - management options
 18. describe the clinical presentation of the common infectious complications post-transplant (listed below) as well as effective prophylaxis and treatment strategies (as applicable)
 - cytomegalovirus (CMV)
 - pneumocystis jiroveci pneumonia (PJP)
 - herpes virus
 - fungal infections
 - polyomavirus
 19. identify and describe the medical management of common post-transplant complications and make appropriate treatment recommendations for the following (as applicable):
 - electrolyte disturbances
 - delayed graft function
 - diabetes
 - hypertension
 - hyperlipidemia
 - post-transplant lymphoproliferative disorder

20. conduct patient teaching for the Self Medication Program which includes the ability to:
 - identify key elements and content of the Self Medication Program
 - organize and deliver information in a logical and patient-focused manner
 - engage patient/caregivers in interactive discussion
 - assess patient's learning needs and tailor information accordingly
 - assess patient's competency to participate in the program

21. conduct patient discharge which includes the following:
 - collaborating with the medical team to carry out discharge medication reconciliation and resolve outstanding drug therapy problems prior to discharge
 - preparing a discharge medication list in patient-friendly format
 - conducting discharge counseling
 - identifying factors which may lead to medication non-adherence on discharge
 - implementing strategies to promote medication adherence on discharge

DESCRIPTION:

During this 4-week rotation, residents will be providing pharmaceutical care to de novo and re-admitted kidney transplant recipients in the Toronto General Hospital Multi-Organ Transplant inpatient unit.

Teaching will be provided by a variety of methods including self-directed learning, multidisciplinary patient care rounds, resident-preceptor therapeutic discussions, multidisciplinary teaching rounds and pharmacy rounds (clinical sharing sessions, clinical foundations etc).

Residents can expect to participate in peer-to-peer teaching and learning.

RESIDENT RESPONSIBILITIES:

The resident will:

1. provide previous rotation assessment, longitudinal knowledge tracking, and rotation specific objectives to preceptor at start of rotation.
2. provide evidence-based patient care to the patients selected by the resident and preceptor according to the rotation objectives and the resident's experience and interest. The number of patients selected varies from resident to resident, but an estimate of the expectation is 2-4 new patients/week.
3. use an appropriate tool to complete work-up on assigned patients, identify and prioritize drug-therapy problems/issues, develop a pharmacy care plan, and document patient's daily progress and follow-up. The resident will be the primary pharmacy care-giver responsible for providing pharmaceutical care to these patients and will incorporate principles of shared decision-making into his/her practice and shall be governed by the patient's desired outcome of therapy.
4. document all pharmacy interventions/activities in the Hospital Information System (HIS), with the preceptor's co-signature where appropriate.
5. meet daily with preceptor to review and discuss patient issues. Specific meetings include:
 - pharmaceutical care patient care work-up
 - pre-selected therapeutic discussions
6. actively participate during inter-professional patient care rounds. The resident will bring to the attention of other health care professionals the actual or potential drug therapy problems, and discuss well thought-out plans for the prevention and resolution of these problems. Specific rounds include:

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- kidney transplant team rounds Monday and Thurs at 10:00 am.
7. develop and present at least one presentation to staff pharmacists. Presentation topic (with supplementary readings, journal articles, etc) should be emailed to staff pharmacist one week in advance. Optional additional presentation to nursing, physician or allied health staff (as determined by preceptor).
 8. Attend the following educational rounds:
 - pharmacy education (clinical sharing or clinical foundations)
 - journal clubs (optional)
 - pharmacy resident presentations (as applicable)
 - Multi-Organ Transplant Program Rounds (Wednesdays at 8:00 am)
 9. Complete the following assessments:
 - written midpoint assessment jointly with preceptor
 - verbal and written self-assessment after each presentation
 - written final self-evaluation (forward to preceptor prior to meeting to discuss)
 - written evaluation of the rotation and preceptor at the end of the rotation
 - longitudinal knowledge tracking

RESIDENT ASSESSMENT:

Residents will be assessed in the following manner:

- verbal formative feedback provided on a daily basis.
- verbal/written feedback provided by interprofessional team members or patients
- verbal/written feedback provided by pharmacy learners (on teaching skills specifically)
- mid-point meeting and verbal/written assessment of resident's progress (Clinical Rotation Midpoint Assessment form)
- end of rotation written final self-evaluation completed by resident (Clinical Rotation Evaluation form)
- end of rotation written final evaluation completed by preceptor (Clinical Rotation Evaluation form)

Assessments and evaluations are based on patient care work-ups, therapeutic interventions, participation in inter-professional rounds, resident-preceptor therapeutic discussions, case presentations, teaching activities and professional conduct.
