

**Liver Transplantation and Hepatology**

**Vancouver General Hospital**

**Rotation Manual**

# DESCRIPTION

The Liver transplant program at Vancouver General Hospital was established nearly 30 years ago and is the third largest program nationwide, providing care to more than 900 liver transplant recipients. The liver transplant multidisciplinary team consists of hepatobiliary surgeons, transplant hepatologists, transplant/hepatology fellows, pharmacists, nurses, dieticians, social workers, and psychologists who provide care to both inpatient and outpatient liver allograft recipients. The liver transplant pharmacist attends daily ward rounds on all inpatient liver transplant recipients, in addition to twice weekly ambulatory SOT outpatient clinics on Mondays and Thursdays. During this residency rotation, the pharmacy resident will have an opportunity to integrate with the multidisciplinary team and provide pharmaceutical care and education to the Liver Transplant recipients.

# GOAL

The resident will develop the knowledge, organizational and clinical skills required to provide pharmaceutical care to liver transplant recipients. By the end of the rotation, the resident should be able to function effectively and independently.

# LEARNING OBJECTIVES

Per those listed for all LMPS Direct Patient Care (DPC) Rotations, available on our Evaluation Outcomes page at [http://www.lmpsresidency.com/residents/resident-manual/evaluation-](http://www.lmpsresidency.com/residents/resident-manual/evaluation-outcomes) [outcomes](http://www.lmpsresidency.com/residents/resident-manual/evaluation-outcomes)

The expected level of resident performance by the completion of this 4-week rotation is outlined in the Direct Patient Care Rotation Assessment of the Resident form.

# ROTATION-SPECIFIC OBJECTIVES

1. Demonstrate the ability to integrate/apply their knowledge, including the pathophysiology,

clinical presentation, therapeutics and associated pharmacotherapy, of the following disease states/processes through patient care work-ups and activities, and therapeutic discussions:

* + Indications and contraindications to LT
  + Acute cellular rejection and chronic rejection
  + Allograft tolerance and transplant immunology
  + Immunosuppressive pharmacology
    - Demonstrate an understanding of the indication, combination, adverse effects and monitoring parameters of various anti-rejection medications used in LT recipients.
    - Calcineurin inhibitors (cyclosporine, tacrolimus)
    - Inhibitors of T-cell/B-cell proliferation (azathioprine, mycophenolate)
    - mTOR inhibitor (sirolimus)
    - Glucocorticoids (prednisone, methylprednisone)
    - Antibody therapy (ATG)
    - IL-2 receptor blockers (basiliximab)
  + Infection and prophylactic strategies post liver transplantation (LT)
    - Surgical site infection
    - CMV reactivation/infection
    - Fungal infections
  + AKI post LT and mitigation strategies
  + Short-term and long-term complications post-LT including medical and surgical complications
  + Viral hepatitis – prevention and treatment of hepatitis B and C

# RESIDENT’S OWN OBJECTIVES

Residents will identify several of their own learning objectives for the rotation. These should be documented in their ePortfolio prior to the start of the rotation, discussed with the preceptor on day 1 of the rotation and assessed at the various evaluation points throughout the rotation.

1.

2.

3.

# REQUIRED ACTIVITIES

The resident will:

1. Provide pharmaceutical care to all assigned patients on the ward as per the objectives above. The resident’s patient load will be determined based on the resident’s previous experience and competence and will be modified at the discretion of the preceptor.
2. Conduct best possible medication histories for all patients under their care.
3. Provide discharge medication counselling and education for all patients under their care,

facilitating seamless care by liaising with the hepatologist on-call, post-transplant nurse co-ordinator, outpatient transplant pharmacy, other pharmacies, BC Pharmacare, etc. as appropriate.

1. Attend daily multidisciplinary inpatient rounds.
2. Attend weekly multidisciplinary Liver Rounds on Thursday mornings at 0700.
3. Provide outpatient follow up for patients who are discharged home during outpatient Liver transplant clinic visits.
4. Meet with the preceptor daily (for 1 to 2 hours) to present completed patient work-ups and discuss any patient-related issues, therapeutic controversies, and specific topics.
5. Discuss all written notes and recommendations with the preceptor prior to implementation, unless previously arranged with the preceptor.
6. Prepare/review two to three therapeutic topics per week by completing any assigned pre- readings and reviewing any associated pharmacotherapy or therapeutics. Topic discussions should be incorporated into the resident’s daily patient discussions with the preceptor. Didactic discussions are optional.
7. Prepare and deliver one journal club, nursing in-service or case presentation for the pharmacy staff at pharmacy education sessions.
8. Attend other weekly pharmacy education sessions and/or presentations.
9. Complete and submit any relevant procedure logs to the preceptor via one45 during the course of the rotation. Please see [http://www.lmpsresidency.com/residents/resident-](http://www.lmpsresidency.com/residents/resident-manual/procedure-logs) [manual/procedure-logs](http://www.lmpsresidency.com/residents/resident-manual/procedure-logs) for further details.
10. Attend weekly medical grand rounds (optional)

# GENERAL STRUCTURE OF THE ROTATION

**Monday Tuesday Wednesday Thursday Friday Week 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Orientation  AM: Outpt clinic PM: Inpt work up | Patient report | Patient report | 07:00 LT  Rounds 09:00  Outpt clinic | Patient report Therapeutics  discussion |
| AM: Outpt clinic  PM: Pre-LT  clinic | Patient report | Patient report Therapeutics discussion | 07:00 LT  Rounds 09:00  Outpt clinic  13:00LTR  Rounds | Patient report  Midpoint Evaluation |
| AM: Outpt clinic  PM: Pre-LT  clinic | Patient report Therapeutics discussion | Patient report | 07:00 LT  Rounds 09:00  Outpt clinic  Patient report | Patient report |
| AM: Outpt clinic  Patient report | Patient report | Pharmacy education session  Patient report | 07:00 LT  Rounds 09:00  Outpt clinic  Patient report | Patient report Patient  handover  Final Evaluation |

**Week 2**

**Week 3**

**Week 4**

**COMMUNICATION EXPECTATIONS**

* 1. The resident will discuss all recommendations with the preceptor prior to implementation, unless otherwise arranged with the preceptor.
  2. The resident will discuss all written chart notes with the preceptor prior to placing them in the chart, with the exception of medication histories and allergy clarifications, unless otherwise arranged with the preceptor.
  3. The resident will notify the preceptor in advance (i.e.: prior to the start of the rotation) of all required off-site activities (e.g.: ADS, BC Wide case presentations, etc.) and absences during the rotation.
  4. The resident is encouraged to provide on-going, daily feedback to the preceptor to assist in enriching his or her own learning experience throughout the course of the rotation.

# PRECEPTOR RESPONSIBILITIES

The preceptor will:

1. Meet with the resident on day 1 of the rotation to discuss the goals and objectives of the rotation and work with the resident to develop a schedule for all rotation-specific activities and therapeutic discussions.
2. Clearly communicate expectations of the resident at the start of the rotation and throughout the rotation as required.
3. Provide the resident with a brief orientation and introduction to the pharmacy department, ward, and health care team.
4. Meet with the resident briefly every morning to triage and identify patients for work-up.
5. Meet with the resident daily (for 1 to 2 hours) to discuss and review all patients under the resident’s care, incorporating clinical and therapeutic topic discussions at least 2-3 times per week.
6. Be available to the resident in person or by phone at all times during the rotation.
7. Schedule a presentation date and time with the department and assist the resident in selecting their topic for their journal club/nursing in-service/case presentation at least 2 weeks in advance of the scheduled date.
8. Review and provide feedback on any relevant procedure logs submitted by the resident via one45 during the course of the rotation.
9. Provide informal feedback to the resident on their performance on a daily basis and complete and discuss all required written evaluations with the resident by the completion of the rotation.

# EVALUATION PROCESSES

Guidance on Evaluation Policies and workflow are available at

<http://www.lmpsresidency.com/residents/resident-manual/evaluation-policies>

1. The resident will receive a written, formative evaluation at the midpoint of the rotation.

This evaluation will take into account the rotation-specific objectives and the resident’s own learning objectives.

1. The resident will receive a written, summative evaluation at the end of their rotation. This evaluation will take into account the rotation-specific objectives and the resident’s own learning objectives.
2. The resident will receive continuous feedback throughout the rotation and this will be considered part of the evaluation process.
3. The resident will provide written evaluations of both the preceptor and the rotation and complete a written self-evaluation prior to the last day of the rotation.
4. The preceptor and resident will discuss their respective evaluations in person at midpoint and on the last day of the rotation.

# REQUIRED READING & RESOURCES

All relevant references will be provided to the resident on a USB flash drive.