

**Critical Care Rotation**

**Vancouver General Hospital**

**Rotation Manual**

**DESCRIPTION**

The Critical Care rotation is a mandatory rotation in the LMPS Residency Program. The Intensive Care Unit (ICU) at VGH focuses on the acute and critical management of medical, surgical, trauma, spinal cord injury, neurological, transplant, and cardiovascular surgery patients. In addition, the ICU team is responsible for care of non-ventilated High Acuity Unit (HAU) patients. This rotation requires resident participation for approximately forty hours per week for four weeks in the 34-bed ICU and in the 24-bed HAU. These units have advanced ventilator and hemodynamic monitoring equipment and are continuously staffed by attending intensivists, fellows, rotating medical residents/students, nurses, respiratory therapists, dieticians, physiotherapists, social workers, and clinical pharmacists. The resident will have the opportunity to work in conjunction with the preceptor and with other clinical pharmacist(s) to provide patient care. The resident will integrate with all other health professionals to identify and to resolve drug-related problems using the pharmaceutical care model.

**GOALS**

1. To familiarize the resident with the critical care medical/surgical environment and the monitoring and management of a diverse population of critically ill patients.
2. To allow the student to apply the pharmaceutical care model to a critically ill patient with multi-organ failure.
3. To utilize knowledge of pharmacology, pharmacokinetics, and therapeutics to provide individualized pharmaceutical care to various critically ill patients.
4. To enhance both written and verbal communication skills and to develop a team-based working relationship with other healthcare providers.
5. To enhance the literature retrieval, drug information, and critical appraisal skills of the student.
6. To enable the resident to function effectively and independently in a diverse medical/surgical critical care setting.

**LEARNING OBJECTIVES**

Per those listed for all LMPS Direct Patient Care (DPC) Rotations, available at <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 In-Training Evaluation of Resident (ITER).

**ROTATION-SPECIFIC OBJECTIVES**

1. Demonstrate competence in discussing the pathophysiology and pharmacotherapy used in the management of the following medical conditions by system (may include but not limited to the following):

CNS: Acute spinal cord injury (SCI), subarachnoid hemorrhage (SAH), CNS infections such as meningitis/encephalitis, status epilepticus, alcohol withdrawal, agitation (pain, anxiety, delirium)

RESP: Asthma/COPD, acute respiratory failure, pneumonia/empyema, pulmonary embolism (PE), lung transplantation

CVS: Hemodynamic monitoring, systemic inflammatory response syndrome (SIRS), shock states (hypovolemic, cardiogenic, septic, neurogenic), hypertensive urgency/emergency, acute congestive heart failure (CHF), cardiac arrhythmias, endocarditis

GI: Stress ulcer prophylaxis, gastrointestinal bleeds, enteral nutrition and pro-motility agents, clostridium difficile colitis, total parenteral nutrition (TPN), assessment of constipation and diarrhea

GU/RENAL: Cystitis, pyelonephritis, acute renal failure, renal replacement therapy (CVVHDF), renal transplantation

FLUID/LYTES: Crystalloid and colloids for volume resuscitation, common electrolyte disorders involving sodium, potassium, and magnesium; interpretation of arterial blood gases (ABGs), and adrenal insufficiency

 HEPATIC: Hepatitis, alcoholic liver disease, liver cirrhosis, liver transplantation

HEME: Venous thromboembolism (VTE) prophylaxis and treatment, anemias, drug-induced thrombocytopenia, anticoagulation for atrial fibrillation and heart valves, disseminated intravascular coagulation (DIC)

MSK/EXTR/SKIN: Cellulitis, catheter-related bloodstream infections, wound infections, decubitus ulcers, thermal injury

1. Demonstrate a basic working knowledge of neurologic and cardiac monitoring and procedures that may be utilized in various critical care patients.

Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), Ultrasound (US), Electroencephalography (EEG)

Neurological exam, Glasgow Coma Scale (GCS), lumbar puncture interpretation, interpretation of sedation and delirium scales

Central lines, arterial lines, pulmonary artery catheters (Swan-Ganz), electrocardiogram (ECG) interpretation, echocardiogram interpretation, chest X-ray interpretation, mixed venous oxygenation

**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.

**REQUIRED ACTIVITIES**

The resident will:

1. Review previously assigned patients prior to meeting with preceptor daily at 0830-0900h prior to patient care rounds.
2. Provide pharmaceutical care to critically ill patients in the ICU during patient care rounds (0900-1400h) by reviewing existing medication therapy and by detecting and solving drug-related problems. Patient load will be determined based on the resident’s previous experience and proficiency and will be modified at the discretion of the preceptor.
3. Assist the team in best possible medication history and medication reconciliation.
4. Provide drug information to the medical and nursing staff and patients as requested.
5. Liaise and follow-up with the appropriate ward pharmacist when patients are transferred to a general ward from the ICU.
6. Document all clinical activities in the patient’s health record. Notes should be discussed with the preceptor BEFORE placing them in the chart unless otherwise arranged by preceptor.
7. Prepare for two or more comprehensive topics per week for discussion with preceptor. These may include topics pre-selected by the preceptor as well as specific topics on which the resident would particularly like to expand their knowledge base.
8. Meet daily with preceptor to discuss the patients being followed, issues of interest, therapeutic controversies, ongoing evaluation, and special topics.
9. Identify an adverse drug reaction and report it to DPIC using the proper form (if applicable).
10. Prepare and deliver one journal club, health-care in-service, or case presentation for the pharmacy staff at pharmacy education sessions.
11. Attend pharmacy education sessions (e.g. scheduled student or resident presentations).
12. Other activities as assigned by preceptor.
13. Complete and submit any relevant procedure logs to the preceptor via the online system

**GENERAL STRUCTURE OF THE ROTATION**

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| --- | --- | --- | --- | --- | --- |
|  | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| **Week 1** | OrientationICU roundsRotation objectives | Review patientsICU roundsTopic/patient discussion | Review patientsICU rounds | Review patientsICU roundsTopic/patient discussion | Review patientsICU rounds  |
| **Week 2** | Review patientsICU rounds | Review patientsICU roundsTopic/patient discussion | Review patientsICU rounds | Review patientsICU roundsTopic/patient discussion | Review patientsICU roundsMidpoint evaluation |
| **Week 3** | Review patientsICU rounds | Review patientsICU roundsTopic/patient discussion | Review patientsICU roundsPrep for case presentation | Review patientsICU roundsTopic/patient discussion | Review patientsICU roundsResident Half-day |
| **Week 4** | Review patientsICU rounds | Review patientsICU roundsTopic/patient discussion | Review patientsICU roundsCase presentation | Review patientsICU roundsTopic/patient discussion | Review patientsICU roundsHandoverFinal Evaluation |

**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 (ie: prior to the start of the rotation) of all required off-site activities 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 at the beginning 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. Introduce the resident to the pharmacy department, ward, and health care team that the resident will be working with.
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. Assist the resident in selecting their topic for journal club/case presentation and scheduling a presentation date and time with the department.
8. Provide informal feedback to the resident on their performance on a daily basis.

**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.
2. 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.
3. The resident will receive continuous feedback throughout the rotation and this will be considered part of the evaluation process.
4. The resident will provide written evaluations of both the preceptor and the Critical Care rotation and complete a written self-evaluation prior to the last day of the rotation.
5. The preceptor and resident will discuss their respective evaluations in person at midpoint and on the last day of the rotation.

**REQUIRED READING & RESOURCES**

**Before rotation:**

Provided by preceptor

**During rotation:**

Provided by preceptor