

**Island Health Pharmacy Practice Residency**

**ADULT INTENSIVE CARE ROTATION**

**Preceptors:**

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**ROTATION DESCRIPTION**

The clinical rotation in adult intensive care provides the Pharmacy Resident with training and experience in the various aspects of critical care pharmacotherapy. The rotation is based in the intensive care units at the Royal Jubilee Hospital (RJH), Victoria General Hospital (VGH) and Nanaimo Regional General Hospital (NRGH). These tertiary care ICUs are similar in size, with approximately 10 beds per site. Patients present with various medical and surgical issues – RJH and NRGH provide greater representation of cardiac and chronic renal failure populations, whereas VGH provides greater representation of neurosurgery and trauma populations

The ICU team typically consists of critical care physicians (rotating weekly), registered nurses, respiratory therapists, physiotherapists, dieticians, social workers, chaplains, and the clinical pharmacy specialist. Multidisciplinary students and residents are regular participants in all of the units, and members of the ICU team are eager to provide teaching in their respective areas of expertise. The majority of rotation time is spent on direct patient care activities, including but not limited to active participation in daily patient care rounds. The remainder of the time is comprised of working on assigned projects and/or presentations and participating in scheduled therapeutic discussions. The resident is provided with informal feedback on a daily basis and is formally assessed at the rotation midpoint and at the end of rotation. A final oral exam, in short-answer format, may be a component of the final evaluation.

**Goals & Objectives**

The first goal and list of objectives and required activities are specific to this rotation. Goals two to four and accompanying objectives are common to all direct patient care rotations and are based on the Canadian Pharmacy Residency Board (CPRB) accreditation standards.

**Rotation-Specific Goal 1:**

Provide the Pharmacy Resident with training and experience in a critical care environment.

**Objectives**

At the conclusion of this rotation the resident will be able to:

1. Describe the pharmacotherapy management of and the pathophysiology of medical conditions commonly encountered in the intensive care environment such as:
   1. **CNS:** traumatic brain injury, acute stroke, subarachnoid hemorrhage, sedation/analgesia/delirium in the ICU, meningitis, seizures and alcohol withdrawal
   2. **Respiratory:** pneumonia (community/hospital/ventilator-acquired), ARDS, exacerbations of COPD and asthma, and pulmonary embolism
   3. **CVS:** inotrope/vasopressor pharmacotherapy, acute heart failure, atrial fibrillation and endocarditis
   4. **GI:** stress ulcer prophylaxis, abdominal infections, C. difficile colitis, enteral feeding intolerance, peritonitis
   5. **Hepatic:** hepatic failure (dosage adjustments and drug causes), cirrhosis, ascites, portal hypertension, esophageal varices, hepatorenal syndrome
   6. **GU:** acute renal failure (dosage adjustments and drug causes), continuous renal replacement therapy, urosepsis
   7. **Fluid/lytes:** common electrolyte imbalances, volume resuscitation, and acid-base disorders
   8. **Endocrine:** critical illness-related corticosteroid insufficiency, blood glucose control/insulin therapy in the critically ill
   9. **Heme:** DVT prophylaxis and treatment, anemia, disseminated intravascular coagulation, heparin-induced thrombocytopenia and thrombosis, and febrile neutropenia
   10. **Skin and Soft Tissue:** decubitus ulcers, cellulitis
   11. **Other:** management of septic shock

**REQUIRED ACTIVITIES**

* The resident will attend patient care rounds daily.
* The resident will assume responsibility for the pharmacotherapy management of all patients assigned by the preceptor. The resident is expected to take initiative in voicing concerns and recommendations at daily patient care rounds, as discussed with the preceptor.
* The resident will provide pharmacokinetic therapeutic drug monitoring for all patients receiving target medications in the ICU.
* The resident will meet with the preceptor on a daily basis to review the pharmacotherapy and monitoring plans of assigned patients.
* The resident will regularly meet with the preceptor to discuss topics related to critical illness and will be assigned pre-readings as appropriate. Scheduled therapeutic discussions may be arranged for items in bold, and other items may be discussed informally according to the resident’s area(s) of interest/need for learning and the type of patients who are admitted to the ICU during the rotation.
* The resident will present a patient case or a therapeutic topic to pharmacy staff +/- physicians and medical residents, highlighting a controversial and/or emerging issue, in the latter half of the rotation. *This activity may be altered/omitted at the discretion of the preceptor in the event of scheduling conflict.*
* The resident will complete any additional activities (e.g., journal club sessions) or projects related to critical care as assigned by the preceptor.
* The resident may be asked to complete an oral examination (short-answer format) at the end of the rotation that will address key learning points throughout the rotation (standard for VGH and RJH rotations).

**PRECEPTOR CONTACT TIME**

1. The preceptor will spend a minimum of one hour per day with the resident discussing patient cases and approaches to identification, prevention, and resolution of drug-related problems, development of therapeutic plans, and development of monitoring plans. This will not include time spent with the resident during patient care rounds.

2. The preceptor will spend a minimum of two hours per week with the resident discussing select therapeutic disease states.

**EVALUATIONS & ASSESSMENTS**

The resident and preceptor shall complete and review together the mid-point and final evaluations. The mid-point assessmentshould be completed at the half-way point of the rotation. Final evaluations shall be completed at the end of the rotation.

**Mid-point evaluations (Formative):**

* resident’s self-assessment & preceptor’s assessment of the resident

**Final evaluations (Summative):**

* resident’s self-evaluation and evaluation of the preceptor and rotation
* preceptor’s evaluation of the resident
* preceptor’s self-evaluation (Annually)

**RESIDENTS PERSONAL LEARNING OBJECTIVES FOR ROTATION**

Prior to the start of the rotation the resident will enter three to five personal learning objectives into their one45 procedure log. The resident and preceptor will review these personal learning objectives together on the first day of the rotation. Once the preceptor has read and discussed these personal learning objectives with the resident they will sign off in the procedure feedback log. The preceptor will then take steps to integrate learning activities into the rotation to help the resident achieve these learning objectives.

The achievement of these objectives will be assessed and documented in section D. of both the midpoint and final evaluation forms.

**Goals and Objectives For All Direct Patient Care Rotations (Goals 2-4)**

**Goal 2:**

Develop and integrate the knowledge required to provide direct patient care as a member of the inter-professional team.

**Objectives:**

The resident will be able to:

1. Relate knowledge of the pathophysiology, risk factors, etiology and clinical presentation of medical conditions, including symptoms, physical assessment, relevant diagnostics, and laboratory findings, to patient-specific clinical findings to make appropriate, patient-specific drug therapy recommendations. (2018 CPRB 3.1.1.b)

2. Relate knowledge of pharmacology, pharmacokinetics, pharmaceutics, and evidence-based therapeutics to patient-specific clinical findings to make appropriate, patient-specific drug therapy recommendations. (2018 CPRB 3.1.1.b, 3.1.2.a.b.c)

3. Acquire and utilize knowledge of safe medication practices to manage and improve medication use for patients. (2018 CPRB 3.2.5, 3.2.6, 3.3.2)

**Goal 3:**

Demonstrate the necessary clinical skills to provide direct patient care as a member of the inter-professional team.

**Objectives:**

The resident will be able to:

1. Place a high priority on, and be accountable for, selecting and providing care to patients who are most likely to experience drug therapy problems. (2018 CPRB 3.1.1.a, 3.1.7)

2. Establish a respectful, professional, ethical relationship with the patient and/or their caregiver(s). (2018 CPRB 3.1.4, 3.1.8.a)

3. Gather relevant patient information through patient interview and from all appropriate sources. (2018 CPRB 3.1.8.d.e)

4. Develop a prioritized medical problem list and describe the currently active issues that are responsible for the patient’s admission or clinic visit. (2018 CPRB 3.1.8.f)

5. Identify, justify, and prioritize a list of patient-specific drug therapy problems. (2018 CPRB 3.1.8.c, 3.2.4)

6. Establish and incorporate patient’s desired outcome(s) of therapy and principles of shared decision making into his/her practice. (2018 CPRB 3.1.5, 3.1.6, 3.1.8.b.f)

7. Establish care plans for individual patients that include consideration of the patient's goals and the roles of the other team members. (2018 CPRB 3.1.5, 3.1.6, 3.1.8.b.f)

8. Identify, prioritize, assess, and justify a list of reasonable therapeutic alternatives and discuss pros/cons of each, considering efficacy, safety, patient factors, administration issues, and cost. (2018 CPRB 3.1.2.b.c, 3.1.8.d.e.f)

9. Develop, prioritize, justify, defend and implement a list of patient-specific recommendations for identified drug therapy problems. (2018 CPRB 3.1.1.d, 3.1.3.c, 3.1.6,3.1.8.f.g)

10. Design and implement monitoring plans for drug therapy outcomes that accommodate new or changing information. Provide patient education related to their medication, self-management and or monitoring (2018 CPRB 3.1.8.h.i)

11. Establish and maintain effective inter- and intra-professional working relationships for collaborative care. Engage in respectful, compassionate, non-judgmental, culturally safe, tactful conversations with members of the healthcare team. Work effectively with other healthcare professionals by actively participating with other care providers in making care decisions. Provide safe and effective transfer of care responsibility during care transitions (2018 CPRB 3.1.3.a.b.e.f)

12. Recognize when care should be handed over to another team member. (2018 CPRB 3.1.3.a.b.e.f)

13. Proactively communicate care plans using written or electronic means of documentation about the care being provided, in a manner that will optimize clinical decision-making, patient safety, confidentiality and privacy. (2018 CPRB 3.1.1.d, 3.1.8.i)

14. Effectively respond to medication- and practice-related questions and educate others in a timely manner, utilizing systematic literature search, critical appraisal skills and appropriate means of communication (verbal or written, as appropriate). (2018 CPRB 3.1.2.a.b.c, 3.5.1.a.b.c.d.e)

15. Independently prioritize tasks, think critically, use scientific reasoning, problem solve and manage own time. (2018 CPRB 2.1.5.3, 3.1.1.c, 3.4.1)

**Goal 4:**

Demonstrate the attitudes and behaviours that are hallmarks of a practice leader and mature professional.

**Objectives:**

The resident will:

1. Demonstrate responsibility for own learning, by exhibiting self-direction, motivation. Modify behaviour in response to feedback. Engage in professional conduct by exhibiting punctuality, communication about deadlines, accepting responsibility for recommendations and reliably following through on all assigned tasks. (2018 CPRB 2.1.5.3, 2.1.5.4, 3.1.1.c, 3.4.1)

2. Demonstrate commitment to the profession, exhibiting professional and ethical conduct. Demonstrate respect for colleagues and members of care teams and understand of role within the inter-professional team. (2018 CPRB 2.1.5.6, 3.1.3.a.b.c.d, 3.2.2, 3.3.4)