

Off-Service Critical Care Medicine Rotation Objectives

Preamble:

Critical care medicine is a multidisciplinary field concerned with patients who have sustained, or are at risk of sustaining life threatening, single or multiple organ system failure due to disease or injury. Critical care medicine seeks to provide for the needs of these patients through immediate and continuous observation and intervention so as to restore health and prevent complications. A specialist in adult critical care medicine is a physician or surgeon who is competent in all aspects of recognizing and managing acutely ill adult patients with single or multiple organ system failure requiring ongoing monitoring and support.¹

Program Organization:

Training will be *primarily* based on encounters with patients presenting with a variety of medical and surgical illnesses to the two multidisciplinary intensive care units of the London Health Sciences Centre (LHSC), under the supervision of faculty and senior residents/fellows. Faculty will provide teaching by role modeling, bedside teaching and provision of constructive feedback. Patient care rounds, teaching rounds and clinical conferences will supplement patient encounters.

Expectations:

Over the 1 to 3 month training period, it is expected that trainees will demonstrate ongoing development in each of the CanMEDS 2000 roles (listed below) such that the depth, sophistication, efficiency and proficiency of their performance increases with experience. Trainees completing the program should expect to achieve the key competencies described within each domain. This will be documented using a critical care specific in-training evaluation report (ITER) at the end of the training.

Evaluation:

All faculty supervisors are encouraged to discuss performance on a regular basis with the trainee. In addition, all supervisors will be asked for feedback on the trainee towards the end of their rotation and an exit interview will be scheduled with the rotation supervisor. The Critical Care Junior In-Training Evaluation Report (ITER) will be reviewed, signed, and forwarded to the offices of the Program Director, Program in Critical Care and to the trainee's Specialty/Subspecialty Program Director.

General Objectives:

1. To obtain a working knowledge of critical care medicine by actively participating in the management of critically ill patients.
2. To gain an understanding of the integrative nature of disease in the critically ill patient and the interdisciplinary approach to the management of such patients.
3. To understand the pathophysiology of commonly seen diseases in critically ill patients.
4. To become familiar with the principles of hemodynamic monitoring, airway management and ventilator care.

5. To be able to identify the patient at risk, perform an appropriate physical examination, formulate a problem list and institute a course of therapy (commensurate with the resident's of training) under the direction of senior personnel.
6. To gain proficiency in procedures commonly carried out in a critical care unit, commensurate with the level of training.
7. To become proficient in the management of a cardiac arrest and the acute resuscitation of an acutely ill patient.

Specific Objectives:

Medical Expert:

The trainee will demonstrate:

- i. applied knowledge of the generalist aspects of critical care illness (*see below*).
- ii. practical knowledge of specific technical skills (*see last page*).
- iii. stabilization, assessment, investigation and collaborative management of the critically ill patient with the ability to integrate information and assist the ICU health care team in effective patient care.

The trainee will demonstrate applied knowledge of the following:

Respiratory Dysfunction

The ability to determine the presence of respiratory failure, provide for its emergency support, and have a plan of action to subsequently investigate and manage common problems.

Cardiovascular Dysfunction

The ability to recognize the problem, provide emergency life support (including ACLS), and embark upon a diagnostic and management program.

Neurological Dysfunction

The ability to recognize common problems in a patient with a central nervous system (CNS) crisis and/or an altered level of consciousness, institute immediate life-sustaining measures, carry out appropriate neurological examination, derive a differential diagnosis, and continue with appropriate diagnostic and supportive measures.

Neuromuscular Dysfunction

The ability to recognize the seriousness of the problem of a patient with an acute or chronic neuromuscular disorder, institute life-sustaining measures, and compose a program of definitive diagnosis, support, and specific therapy.

Renal Dysfunction

The ability to recognize the problem of a patient with oliguria or evidence of advancing or established renal failure, institute measures to preserve remaining renal function, and provide for precise diagnosis, adequate supportive measures, and appropriate therapy.

Gastrointestinal Dysfunction

The ability to evaluate the nature of the illness of a patient who presents with gastrointestinal crisis, institute immediate life-sustaining support, and develop a diagnostic and therapeutic plan.

Hepatic Dysfunction

The ability to recognize the problem of a patient with jaundice and/or manifest hepatic failure, provide for immediate life-sustaining support, and develop a diagnostic and therapeutic plan.

Hematological/Oncologic Disorders

The ability to recognize the problem of a patient with a malignancy, a thrombotic or thrombolytic disorder, bleeding, neutropenia, or anemia, provide for any indicated life-sustaining support, and proceed with an orderly course of investigation, management, continued monitoring, and support.

Metabolic - Endocrine Disorders

The ability to recognize the nature and severity of the problem of a patient with common metabolic, endocrine, or fluid/electrolyte abnormalities, establish a differential diagnosis, and embark on a course of definitive diagnosis, treatment, and continued monitoring and support.

Septic Illness

The ability to recognize the infective nature of the condition of a patient with catastrophic septic illness, institute immediate life-sustaining measures, establish a differential diagnosis (site of origin, etiological pathogens), and embark upon a course of definitive diagnosis, continued life support, and appropriate antimicrobial and/or surgical therapy.

Intoxication

The ability to formulate a differential diagnosis for a patient potentially suffering from a toxic syndrome and undertake a sequential plan to support organ function, prevent further absorption, alter distribution, and if possible, enhance elimination by natural and mechanical means.

Nutritional Support

The ability to evaluate the nutritional status of the critically ill patient, identify current deficiencies, ongoing losses, and extra needs induced by the illness, including the ability to devise a management strategy for the provision of either enteral and/or parenteral nutrition.

Pharmacotherapy

Demonstrate general knowledge of indications, risks, and side effects of relevant pharmacotherapy used in the critical care environment, including common drugs to support circulation, analgesia and sedation, and antimicrobials.

End of Life Issues

In a patient where death is inevitable demonstrate an ability to facilitate a dignified process of life sustaining support withdrawal, without the withdrawal of care.

Communicator:

The trainee will demonstrate proficiency in:

- i. obtaining a thorough and relevant medical history.
- ii. the bedside presentation of patient problems.
- iii. discussing diagnoses, investigations and management options.
- iv. obtaining informed consent for medical procedures and treatments.
- v. communication with members of the ICU health care team.
- vi. communication with referring physicians and their representatives.
- vii. communication with patients and their families.

Collaborator:

The trainee will:

- i. demonstrate proficiency in working effectively within the ICU health care team.
- ii. demonstrate appropriate use of consultative services.
- iii. recognize and respect the roles of other physicians, nursing staff, respiratory therapists, physiotherapists, occupational therapists, nutritionists, pharmacists, social workers, secretarial and support staff in provision of optimal patient care.

Manager:

The trainee will:

- i. utilize health care resources in a scientifically, ethically and economically defensible manner.
- ii. be aware of, and utilize clinical practice guidelines, especially those to prevent potential problems
- iii. demonstrate effective time management to achieve balance between professional and personal responsibilities.

Health Advocate:

The trainee will:

- i. recognize and respond appropriately in advocacy situations.

Scholar:

The trainee will:

- i. develop and document an effective, personal learning strategy.
- ii. demonstrate the ability to generate clinical questions related to patient care and utilize and analyze available resources to develop and implement evidence based solutions to such questions.

- iii. demonstrate practical knowledge of the basic sciences relevant to the critically ill patient including pathology, physiology and pathophysiology, biochemistry, and pharmacology.
- iv. demonstrate effective teaching skills that are adapted to the needs of the learner.

Professional:

The trainee will:

- i. demonstrate integrity, honesty and compassion in delivery of the highest quality of care.
- ii. demonstrate appropriate personal and interpersonal professional behaviours.
- iii. develop and demonstrate the use of a framework for recognizing and dealing with ethical issues in clinical practice including truth-telling, consent, conflict of interest, resource allocation and end-of-life care.

Technical Skills:

*The Junior Resident is expected to demonstrate **practical knowledge** in the technical aspects of each of the following listed below. Documented competency in each of these skills would be ideal, however, we cannot guarantee that each resident will have 'hands-on' exposure to all these experiences during their limited time in the ICU.*

- Assessment and maintenance of the airway
- Care of patient requiring orotracheal intubation
- Care of the patient managed using conventional ventilation
- Care of the patient managed using noninvasive ventilation
- Resuscitation of the patient with undefined shock
- Central venous cannulation for resuscitation
- Resuscitation of the patient with a rhythm disturbance (drugs, cardioversion, defibrillation, & pacing)
- Care of the patient in the ICU following high risk surgery
- Arterial cannulation
- Application & maintenance of a pulmonary artery catheter
- Portable chest radiograph interpretation
- Thoracentesis & thoracostomy tube insertion
- Lumbar puncture
- Brain stem death determination & organ donor management
- Peritoneal tap
- Calculation of a nutritional plan

1 RCPSC Specific Standards of Accreditation and Specialty Training Requirements for Residency Programs in Adult Critical Care Medicine 2002 (<http://rcpsc.medical.org/information/index.php>)