Rotation Specific Goals and Objectives
Thoracic Surgery Training Program

Rotation: Critical Care Medicine
☐ 1 block  ☐ 2 blocks
Location: Critical Care Trauma Centre (CCTC) – Victoria Hospital
Supervisor: Dr. Rob Arntfield

INTRODUCTION
Many patients seen in Thoracic Surgery will require in the course of their illness some acute care including the use of life support. Critical Care Medicine also touches on many concepts mandatory in the competent practice of Thoracic Surgery, including trauma, altered level of consciousness, cardiac and respiratory physiology, respiratory failure, renal failure, shock, sepsis and their management including the use of mechanical ventilation and other life support. A rotation in Critical Care may offer to the Thoracic Surgery trainee a condensed exposure to such concepts that may help in updating, refining or assimilating some knowledge acquired in previous surgical experience, useful in the comprehensive approach of the acutely ill Thoracic Surgery patient.

DESCRIPTION AND FUNCTIONING
The CCTC is a 30-bed unit. Approximately 2000 patients are admitted per year. This is a multidisciplinary unit; patients include trauma, surgery (general, vascular, thoracic, plastic and other), obstetrics, emergency and medical (general, oncology, respirology and other).

There is a first call Critical Care consultant who is responsible for the teaching team and most of the patients in the unit for 24/7. There is a second call consultant who is responsible for the non-teaching team long-stay patients as well as CCOT (Critical Care Outreach Team) care for these patients 24/7. Although there are several teams, we do function as a unit and help each other when the need arises.

CCTC Consultants:

| Dr. Claudio Martin (Internal Medicine) Chair Critical Care Western | Dr. Scott Anderson (Emergency Medicine) (CCTC site chief) |
| Dr. Mithu Sen (Respirology) (PGE Program Director) | Dr. Neil Parry (General Surgery) (Trauma Director) |
| Dr. Rob Arntfield (Emergency Medicine) (CCTC site Education Director) | Dr. Raymond Kao (Internal Medicine) |
| Dr. Karen Koo (Internal Medicine) | Dr. John Fuller (Anesthesia) |

Senior Residents / Critical Care Fellows
Seniors are residents in the Critical Care residency program, which is a two-year Royal College subspecialty program, or Critical Care Fellows. The Seniors have completed, or are in their final year of residency (in anesthesia, medicine, emergency medicine or surgery). The Seniors are responsible for coordinating patient care and supervising the junior house staff.
The CCTC Team
Caring for critically ill patients is a team effort. Our team includes charge nurses, bedside nurses, respiratory therapists (RTs), nurse educator, nutritionists, physiotherapists, social work and pharmacists. More details about the names and roles of these members are available on the Critical Care Western website. [https://www.schulich.uwo.ca/critical-care-western/junior](https://www.schulich.uwo.ca/critical-care-western/junior)

Daily Functioning of the Resident in CCTC
A typical description of daily teaching rounds, clinical rounds, activities and responsibilities of the residents within CCTC is available on the Critical Care Western website: [https://www.schulich.uwo.ca/critical-care-western/junior](https://www.schulich.uwo.ca/critical-care-western/junior)

CLINICAL AND EDUCATIONAL EXPECTATIONS
The Thoracic Surgery resident will participate in CCTC as a “junior resident”. The purpose of doing a “junior resident” rotation (in house calls – carrying code pager) is to optimize first hand exposure to acute presentation and management (code blue, intubation, line insertion, trauma, etc.). Educational expectations include:
- Participation in CCTC morning teaching rounds (may be exempt for Wednesday Thoracic Surgery teaching)
- Participation of daily activities and patient management in CCTC
- Participation in CCTC call schedule as a “junior resident”: In house 24 hours call – number of call pro-rated to the time in CCTC as per the PAIRO guidelines

EVALUATION
Assessment for this elective will be based on fulfillment of the basic expectations and achievement of the objectives. The same evaluation form (Critical Care Junior In-Training Evaluation Report – ITER) is used for all residents rotating in CCTC as the objectives are in many ways similar. Dr. Dalilah Fortin is responsible of filling the evaluation form with feedback from the consultants, senior residents, nurses and allied health. This form will be posted on the One 45 system and performance reviewed with the trainee.

Goals and Objectives of the Thoracic Surgery Resident/Fellow for the Critical Care Elective

GENERAL OBJECTIVES

- To obtain a working knowledge of critical care medicine by actively participating in the management of critically ill patients.
- 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.
- To understand the pathophysiology of commonly seen diseases in critically ill patients.
- To become familiar with the principles of hemodynamic monitoring, airway management and ventilator care.
- To be able to identify the patient at risk, perform an appropriate physical examination, formulate a problem list and institute a course of therapy.
- To gain proficiency in procedures commonly carried out in a critical care unit.
• 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:
• Applied knowledge of the generalist aspects of critical care illness
• Practical knowledge of specific technical skills
• 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.

Technical Skills
The Resident is expected to demonstrate practical knowledge in the technical aspects of each of the following listed below, depending on available exposure during the rotation and level of training

- 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 / CT interpretation
• Thoracentesis & thoracostomy tube insertion
• Lumbar puncture
• Brain stem death determination & organ donor management
• Peritoneal tap
• Calculation of a nutritional plan

**Communicator**
The trainee will demonstrate proficiency in:
• obtaining a thorough and relevant medical history.
• the bedside presentation of patient problems.
• discussing diagnoses, investigations and management options.
• obtaining informed consent for medical procedures and treatments.
• communication with members of the ICU health care team.
• communication with referring physicians and their representatives.
• communication with patients and their families.

**Collaborator**
The trainee will:
• demonstrate proficiency in working effectively within the ICU health care team.
• demonstrate appropriate use of consultative services.
• 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:
• utilize health care resources in a scientifically, ethically and economically defensible manner.
• be aware of, and utilize clinical practice guidelines, especially those to prevent potential problems.
• demonstrate effective time management to achieve balance between professional and personal responsibilities.

**Health Advocate**
The trainee will:
• recognize and respond appropriately in advocacy situations.

**Scholar**
The trainee will:
• develop and document an effective, personal learning strategy.
• 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.
• demonstrate practical knowledge of the basic sciences relevant to the critically ill patient including pathology, physiology and pathophysiology, biochemistry, and pharmacology.
• demonstrate effective teaching skills that are adapted to the needs of the learner.

**Professional**
The trainee will:
• demonstrate integrity, honesty and compassion in delivery of the highest quality of care.
• demonstrate appropriate personal and interpersonal professional behaviors.
• 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