

ANESTHESIOLOGY CRITICAL CARE MEDICINE ROTATIONS GOALS

Introduction:

The Critical Care Medicine (CCM) rotation is an opportunity for residents to develop proficiency in recognition and management of patients with the set of medical problems that require Critical Care (CC). On completion of the rotation, the resident will have acquired a sufficient quantity of Critical Care Medicine didactics, learned a set of procedural skills, demonstrate adequate decision making in patient care, and show a caring and compassionate attitude for Critically ill patients. The resident is also expected to pursue current evidence to support and improve the practice of CCM as well as to understand the implications on resource allocation and cost.

Rotation options include the General Surgical CCM rotation (7A; 7CS) and the Cardiovascular ICU (8C). In the GS ICU the resident will have the opportunity to care for patients in a semi-closed ICU format, while the trauma unit (7A) offers the closed unit experience. The resident will display the skills of patient evaluation, communication, team work and clinical decision making as well as associated procedural skills. The Cardiovascular ICU (8C) offers the resident the opportunity to work in a closed ICU with a smaller care team. During the C-ICU rotation the resident will have the opportunity to further refine clinical decision making skills and procedural skills within the cardiovascular arena.

Note: Special credentials in Advanced Cardiac Life Support (ACLS) are required prior to the rotation. Credentials in Advanced Trauma Life Support (ATLS) and Fundamental Critical Care Support (FCCS) are recommended.

Goals:

Medical knowledge:

- Understand the physiology of the Cardiovascular, Pulmonary, Endocrine, Renal, Gastroenterology, Hematologic and Neurological Systems.
- Understand the pathophysiology of the common conditions affecting ICU patients that might lead to or contribute to ICU admission.
- Understand the signs and symptoms and the initial treatment for life threatening conditions.
- Understand the general pharmacology and proper use of medications commonly used in the ICU.
- Understand hemodynamic monitoring and special equipment used in the ICU and how it is used to facilitate patient care.
- Understand the goals of sedation and analgesia in the ICU and the different sedation and analgesia options.
- Understand the goal of basic nutrition support principles and the process for formulating and preparing a nutritional care plan.

- Understand the infectious disease issues associated with the critically ill, including the treatment strategies for ventilator associated pneumonia, urinary tract, soft tissues, CVL and intra-abdominal infections.
- Understand basic infection control risks and strategies. Understand the techniques that may be used to prevent central venous line and postoperative wound infections.
- Understand systematic approach to the use of diagnostic testing and consultant activities in the ICU
- Understand the rotation educational requirements developed to teach house staff about relevant medical issues.

Patient Care:

- Understand the signs and symptoms and the initial steps a physician needs to take to treat life-threatening conditions in the critically ill.
- Understand the signs and symptoms and the initial treatment for common ICU medical conditions to include but not limited to:
 - a. Cardiac Insufficiency - Arrest
 - b. Respiratory Insufficiency – Arrest
 - c. Acute Lung Injury (ALI)
 - d. Acute Respiratory Distress Syndrome (ARDS)
 - e. Shock, all types
 - f. Sepsis
 - g. Electrolyte and acid-base disturbances
 - h. Overdose
 - i. Increased inter-cranial pressure / Stroke / Closed Head Injury (CHI)
 - j. Spinal cord injury
 - k. Pneumo-, hemato- and hydrothorax
 - l. Pulmonary Emboli
 - m. Cardiac Tamponade
 - n. Acute Myocardial infarction / Ischemia
 - o. Intra Abdominal/Pelvic catastrophe
 - p. Multi Organ System Failure
 - q. Acute/Chronic Liver Failure
 - r. Acute/Chronic Renal failure
 - s. Endocrine emergencies
 - t. Hematological Emergencies
 - u. Compartment Syndrome
 - v. Rhabdomyolysis
- Understand the basic concepts of therapeutic decision-making.
- Understand the various admission requirements for patients requiring treatment in an ICU and how they differ from patients requiring care in other settings.
- Understand the criteria and various barriers to ICU patient discharge.

- Understand out of operating room airway management, standard ventilator management techniques, and management of complications.
Techniques: open airways on non-intubated patients
ventilation by bag-mask systems
tracheal intubations
fiber optic intubations; bronchoscope
contemporary modes of mechanical ventilation & management of complications
- Understand the following ICU associated procedures, the indications, techniques and the management of complications.
arterial puncture and cannulation
insertion of central venous catheters
pulmonary artery catheters
dynamic/static electrocardiogram interpretation
cardioversion
pericardiocentesis
thoracentesis
needle and tube thoracostomy
pacemaker management, transcutaneous and epicardial
intra-aortic balloon pump
esophageal doppler and echo usage

Practice based learning:

- Understand the need for patient safety goals especially in the areas of monitoring, medication safety and error reduction strategies
- Understand the concepts of therapeutic decision-making and the concept of patient centered care.
- Understand the importance of and the process of assessing patient and family satisfaction.
- Understand the basic methods for searching, reviewing and evaluating the medical and scientific literature
- Understand the role of and importance of ongoing basic and clinical science protocols in the ICU
- Understand the role of process improvements and basic strategies to implement a practice change in the ICU.
- Understand the types and designs of ICU's and the roles of the ICU staff (RN, PT, OT, RT, MSW, CW, Tech, & MD/DO)

Interpersonal and Communication Skills and Professionalism:

- Understand the goals of and importance of teamwork in the Critical Care setting.
- Understand the importance of proper communication as it related to patient care, unit development and the concept of closed loop communication.
- Understand the concept of active listening as it pertains to patient exams, interaction with families and fellow hospital staff.

- Understands the particular skill sets of other CC practitioners, such as CC nurses, RT, PT, OT, dieticians, pharmacists
- Understands the common ethical and social issues as well as patient factors in making patient care decision making

Systems-Based Practice:

- Understand the basic concepts of and issues contributing to ICU costs and the impact on patients and Hospital costs.
- Understand the institutional and unit policies and procedures and the process by which these are developed & reviewed.
- Understand the regulatory policies from the government, acreditors, regulators, and payers as it relates to ICU patients & their care

Assessment and Evaluation

- Daily evaluations by CC faculty during rounds, presentations, conference participation, procedures performed, patient, family & staff interactions.
- Faculty complete a multifaceted evaluation of all residents (Veriform) according to the ACGME outcomes parameters.
- Oral case study examination by CC faculty.
- Pre-and post rotation testing with written multiple-choice questions.
- SCCM is working on achieving this as a web based exam where the residents score will be compared to the national database.

Resident References

- The ICU curriculum CD
- Cardiac ICU Handouts
- Text: Critical Care Medicine: Peri-operative Management, Murray, et.al. Lippincott Williams & Wilkins, 2nd ed. 2002
- Critical Care Medicine: Principles of Diagnosis & Treatment, Parillo & Dellinger Mosby Yearbook, 2nd ed. 2001
- Guidelines for critical care medicine training and continuing medical education. Dorman T, Angood PB, Angus DC et al. Critical Care Med 32(1): 263-272, 20