

Inova Fairfax Medical Campus  
Internal Medicine Residency Program  
Medical/Surgical Intensive Care Unit Rotation

Goals and Objectives

Revised May 2022

**1. Educational Purpose and Goals**

- a. The MSICU rotation exposes residents, interns and medical students to patients with a wide spectrum of critical illness and pathophysiology
- b. Residents, interns and medical students will learn basic concepts of the acute recognition of the critically ill patient and stabilization of the patient utilizing interventions such as mechanical ventilation, invasive and non-invasive monitoring equipment, vasopressor therapies
- c. Learners will develop and understand the differential diagnoses and evaluations required in such critically ill patients
- d. Learners will develop and improve skills in obtaining informed consent and performance of procedures such as central and peripheral IV access, arterial line placement, intubation, paracentesis, thoracentesis, lumbar puncture, bedside point of care ultrasound assessment
- e. Learners will develop skills in identifying surrogate decision makers and communication with respect to developing goals of care in treating our critically ill patients

**2. Principal Teaching Methods**

- a. **Supervised direct patient care:** Resident teams will participate in daily multidisciplinary combined teaching and management rounds with supervising attendings.
  - i. Residents and interns will assume primary roles in the management and coordination of care for their patients, including performance of any necessary procedures and participation in family meetings.
  - ii. Residents will also admit patients to the MSICU service with supervision from a critical care attending physician
- b. **Didactics and small group sessions:** Residents, interns and medical students are expected to attend and participate in the following sessions unless there is an intervening emergency in patient care:
  - i. Internal medicine Monthly Meeting
  - ii. MSICU core lecture series given by MSICU attendings topics including:
    1. Pain, agitation and delirium in the ICU
    2. Sedation in the ICU
    3. Inotropes and Vasopressors
    4. ARDS
    5. Respiratory Failure
    6. Ventilator Management
    7. Hemodynamic Monitoring
    8. Sepsis
    9. Gastrointestinal Bleeding

10. Transfusion in the ICU
  11. Antibiotic therapy in the critically ill
  12. Disorders of acid/base metabolism
  13. Hypertensive emergency
  14. DIC/HIT and coagulopathies in the ICU
  15. Ischemic and hemorrhagic stroke
  16. Arrhythmias
- c. **Self Study:** Residents, interns and medical students are expected to read from a core MSICU rotation reading list including review articles and landmark clinical trials. Learners are also expected to perform self-directed reading based on their patients' medical problems and disease states or as clinical questions develop on teaching rounds.

### 3. Educational Content

- a. Disease mix: Patients with a wide variety of critical illnesses will be seen by MSICU residents, interns and medical students on the critical care service including but not limited to: various forms of shock, respiratory failure, acute GI bleeding, acute delirium, hemorrhagic and ischemic stroke, status epilepticus, acute renal failure, severe electrolyte derangements, sepsis, acute hematologic emergencies, endocrine emergencies including DKA/HHNS, thyroid storm or myxedema coma, neutropenic fever, toxic ingestion or overdose, obstetric emergencies and HIV/AIDS with related complications
- b. Patient characteristics: Inpatients at the tertiary referral center Inova Fairfax Hospital over the age of 18 provide a culturally and ethnically diverse patient population with a wide array of common and rare diseases
- c. Learning Venues: Inova Fairfax Hospital Medical/Surgical Intensive Care Unit
- d. Structure:
  - i. The rotation is a four week block with all clinical time spent in the hospital. The MSICU team consists of an attending intensivist, one to two residents, two to three interns from Inova Internal Medicine Residency, Fairfax Family Practice, Inova OBGYN Residency, Fort Belvoir Community Hospital and George Washington University Hospital. Medical students in their fourth year from University of Virginia, George Washington University will also rotate on the MSICU service.
  - ii. Residents may work some night shifts from 6 pm-6 AM. At times when there are two residents, they will do overnight shifts, supervised by the in-house intensivist 6consecutive days interrupted by time off on Sunday. Interns (except in rare cases) do not take overnight call.
  - iii. There are systems in place to ensure full ACGME duty and work hour regulation compliance including 80 hours per week averaged over 4 weeks, 24+4 hours of continuous duty, 10 hours without duty between shifts, and four days off in four weeks.
  - iv. Daily rounds occur at 8:30 AM with the entire MSICU team, consisting of house staff, attending intensivist, bedside nurse, respiratory therapy, clinical pharmacist, nutritionist and physical therapy.
  - v. Residents will not continue to attend their continuity clinic during this rotation.

- vi. OB/GYN residents will be assigned no more than two patients on their first day; additional goals and objectives for these rotators may be obtained from the OB/GYN residency program.
- vii. The chief resident(s) will orient the resident to the rotation at the beginning of the block and will review the specific schedule at that time

**4. Principal Education Materials**

- a. At the beginning of the rotation, the chief medical residents will provide materials, including this curriculum, a resource list and access to an electronic document including core critical care articles.

**5. Methods of Evaluation**

- a. Feedback will be given to the resident throughout the rotation as appropriate. At the end of the rotation, the attending teaching faculty will complete a web-based evaluation (MedHub) of each team member and review it with the team members.
- b. The residents will also evaluate faculty and the rotation in an anonymous fashion (summarized annually in a composite form to be reviewed by the program directors)
- c. 360 degree evaluations will be collected as appropriate from patients and nursing staff on an annual basis

**6. Resource List**

- a. Textbooks
  - i. Marino: The ICU Book
  - ii. Hall, Schmidt, and Wood: Principles of Critical Care
  - iii. Civeta, Taylor, Kirby: Critical Care
- b. Resident will receive access to an electronic document/drive containing key critical care rotation articles and resources, updated monthly to reflect most recent literature.

**Learning Venues**

- 1. Direct Patient Care
- 2. Didactics and small group sessions
- 3. Self Study
- 4. Lectures
- 5. Simulation lab

**Evaluation Methods**

- A. Global evaluations (done by staff intensivist)
- B. Global evaluations (done by house staff and students)
- C. Procedure log
- D. 360 degree global evaluation

*Competencies in italics are specific to PGY2/3 with progressive responsibility. All others are applicable to all levels.*

<b>Competency: Patient Care</b>	<b>Learning Venue</b>	<b>Evaluation Method</b>
Work with intensivist of record to provide effective care for patients admitted to the medical ICU	1	AB
Perform a focused and directed history and physical exam on a critically ill patient	1	AB

<i>Teach team members how to perform a focused and directed history and physical exam on a critically ill patient</i>	1	AB
<i>Effectively respond to acute emergencies in MICU patients (ie. hypotension, respiratory distress)</i>	1	AB
Perform accurately, with regard to patient comfort, the list of required procedures	1	ABC
Know the indications, contraindications, and risks of the above procedures	1-4	ABC
Be able to manage multiple concurrent admissions within your team by triaging acute and less acute issues	1	AB
<i>Successfully manage MSET's, using ACLS protocols when indicated</i>	1	AB
Succinctly and accurately summarize a case when calling an attending physician	1	AB
Be comfortable in asking upper level personnel for assistance when you feel that patient scenarios are out of the scope of your practice	1	AB
Be able to judiciously order and rapidly interpret diagnostic tests	1-4	AB
Teach the indications and interpretation of diagnostic tests to various levels of learning on the team	1-4	AB
Approach patient management holistically and compassionately	1	AB
<b>Competency: Medical Knowledge</b>	<b>Learning Venue</b>	<b>Evaluation Method</b>
-Understand the function of both non-invasive and invasive blood pressure monitoring systems -List the indications for and complications of central venous and pulmonary artery pressure monitoring -Be able to interpret arterial blood gases -Interpret mixed venous blood gasses and other indices of tissue oxygenation -Identify and develop a differential diagnosis for shock -Describe diagnosis and treatment of myocardial ischemia and infarction -Describe the diagnosis and treatment of each major type of dysrhythmia -Understand the various forms of respiratory failure and the basis of their treatment -Learn basic principles of airway management -Be able to distinguish respiratory, metabolic and mixed acid-base disorders <i>-Understand and be able to describe the primary modes of mechanical ventilation</i> -Describe the definition, diagnosis, pathophysiology and treatment of Acute Lung Injury and Acute Respiratory Distress Syndrome <i>-Understand the management of weaning from mechanical ventilation</i>	1-4	AB

-Differential diagnosis for etiology of increased airway pressures -Management of acute obstructive airway diseases -Pathophysiology and treatment of sepsis and septic shock -Describe risk factors, prevention, diagnosis and treatment of ventilator associated pneumonia and line sepsis -Management of blood glucose in critically ill patients -Diagnosis and treatment of adrenal insufficiency in the ICU -Differential for acute oliguria and azotemia in the ICU -Treatment of acute renal failure in the ICU		
Rationally approach differential diagnosis and management during a case presentation of a critically ill patient	1-4	AB
<b>Competency: Interpersonal and Communication Skills</b>	<b>Learning Venue</b>	<b>Evaluation Method</b>
Communicate effectively with patients and families	1	AB
Communicate effectively with physician colleagues and members of other healthcare professions to assure timely, comprehensive patient care	1	ABD
Communicate effectively with colleagues from other services to coordinate optimal patient care	1	AB
Understand the role of different members of the health care team	1	ABD
Show understanding of cultural and gender differences as they relate to patient preferences of treatment and evaluation	1	ABD
Interact in an effective way with members of the health care team	1	ABD
<i>Demonstrate leadership skills during work and teaching rounds</i>	1	ABD
Concisely present a case on rounds	1	ABD

<b>Competency: Professionalism</b>	<b>Learning Venue</b>	<b>Evaluation Method</b>
Actively participate in rounds	1	ABD
Be timely to conferences and rounds	1	ABD
Treat all team members with respect	1	ABD
Treat all patients with respect	1	ABD
Avoid arrogance toward colleagues and patients	1	ABD
Show honesty, integrity and compassion toward colleagues and patients	1	ABD
Attend conferences regularly	1	ABD
Approach patient care in an altruistic manner	1	ABD
Complete evaluations in a timely manner	1	ABD
Demonstrate acceptance of the responsibilities of your role on the team and toward your peers	1	ABD
<b>Competency: Practice-Based Learning</b>	<b>Learning Venue</b>	<b>Evaluation Method</b>
Acknowledge the “gaps” in medical knowledge	1-4	ABD
<i>Identify errors in medical care and utilize medical literature, information systems, and teachers to address those errors</i>	1-4	ABD
Understand and utilize the information technology available to you at the hospital	1-4	ABD
Accept feedback and work to improve deficiencies	1-4	ABD
<i>Use and teach evidence-based approach to patient care</i>	1-4	ABD
<b>Competency: Systems-Based Practice</b>	<b>Learning Venue</b>	<b>Evaluation Method</b>
Understand and acknowledge the barriers to health care and adherence in your patients	1	ABD
<i>Lead your team’s evaluation of the psychological and social barriers to obtaining adequate health care</i>	1	ABD
Utilize the resources available to you to optimize medical care of your patient	1	ABD