

## **OVERALL GOALS FOR THE CRITICAL CARE CLERKSHIP**

**GOALS** - The goal of the Fourth Year Critical Care Clerkship is to prepare the student to assess and manage critically ill patients. Specifically, our overarching goals are to recognize that exemplary critical care involves the ability to:

- organize complex data sets to form valid hypotheses regarding the mechanisms and determinants of critical illness (PCMC-3)
- provide targeted and timely diagnostic and therapeutic interventions (PCMC-3)
- present complicated patients on rounds in an efficient and clear manner (ECIS-3, PCMC-3)
- become an effective member of an interprofessional team (SATBC-2b)
- demonstrate growth in communication skills, professionalism and medical ethics (ECIS-3, PBMR-1, PBMR-3))

## **CRITICAL CARE CLERKSHIP OBJECTIVES**

**PHYSICIANSHIP OBJECTIVES** - Complementary to specific knowledge and skills objectives, students are expected to demonstrate ongoing growth in the area of interpersonal and communication skills, medical ethics and moral reasoning, practice-based learning and improvement and professionalism. During the clerkship, the student will:

### **Professional Behavior and Moral Reasoning**

- Describe the ethical, legal and medical aspects of withdrawal and withholding of life support and the appropriate use of a DNR order (PBMR-1)
- Demonstrate honesty, integrity, respect, and compassion toward all patients, families, students, faculty, and members of the healthcare team (PBMR-3)
- Behave with accountability and dependability (PBMR-5)
- Anticipate patient care needs and address changing priorities (PBMR-7)

### **Effective Communication and Interpersonal Skills and System Awareness and Team-Based Care**

- Provide verbal patient reports that accurately summarize the patient's condition and need for level of care (PCMC-3)
- Demonstrate organization and effectively communicate thoughts regarding patient care to health care team in order to demonstrate closed loop communication (ECIS-3)
- Communicate effectively with patients and their surrogates, including counseling and education skills (ECIS-1, ECIS-3, PCMC-6)
- Function as a "team player" with residents, attendings, nurses, and ancillary staff. (SATBC-2a,2b)

### **Continuous Learning and Quality Improvement**

## **OVERALL GOALS FOR THE CRITICAL CARE CLERKSHIP**

- Provide a self-assessment that will evaluate his/her performance on clinical service (CLQI-2)
- Apply evidence-based medicine (EBM) principles to patient care (CLQI-3)

### **Patient-Centered Medical Care**

- Document patient care appropriately in the EMR (PCMC-5)

### **Community Engagement and Service**

Identify advocacy and equity issues as they arise during the course of your daily clinical care **(CES 1-2)**

## **HISTORY AND PHYSICAL EXAM OBJECTIVES**

<b>HISTORY and PHYSICAL EXAM OBJECTIVES:</b> Students will perform complete histories and physical exams on patients as well as in simulated settings.			
<b>Specific Physical Examination Objectives</b>	<b>Resources</b>	<b>Where in the Clerkship it is Taught</b>	<b>How Assessed</b>
<ul style="list-style-type: none"> <li>• Perform a focused physical exam (PCMC-2)</li> <li>• Elicit histories from critically ill patients and their surrogates (PCMC-1)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Skill Sessions</b></li> <li>• <b>Didactic Sessions</b></li> <li>• <b>Feedback Opportunities</b></li> <li>• <b>Clinical Opportunities</b></li> </ul>	Simulation practicum, clinical experience	Observation during both simulated patient care experience and clinical experience, simulation examination

## **SKILLS OBJECTIVES**

<b>SKILLS OBJECTIVES</b> – During simulated practicums, students will learn to perform skills relevant in the CCC setting.				
<b><u>SKILL</u></b>	<b>Specific Knowledge Objectives</b>	<b>Resources</b>	<b>Where in the Clerkship it is Taught</b>	<b>How Assessed</b>
<b>Intubation</b>	<p>Explain the indications for intubation, proper placement of an endotracheal tube, and indications for mechanical ventilation (MKS-3b)</p> <p>Execute the skills required to perform intubation on a simulated patient. (PCMC-4)</p>	<ul style="list-style-type: none"> <li>• Didactics</li> <li>• Small group/Sim sessions</li> </ul>	Simulation practicum, clinical service and didactic lectures	Written examination and an individual simulation final examination
<b>Central line</b>	Explain the indications for placement of a central venous catheter (MKS-3b)			

## **HISTORY AND PHYSICAL EXAM OBJECTIVES**

	Execute the skills required to perform central line placement on a simulated patient. (PCMC-4)			
<b>Arterial catheter</b>	Explain the indications for placement of an arterial catheter (MKS-3b)  Execute the skills required to perform arterial catheter placement on a simulated patient. (PCMC-4)			

## **KNOWLEDGE OBJECTIVES**

<b>KNOWLEDGE OBJECTIVES</b>		
<b>General:</b> Topics divided into Respiratory, Hemodynamic, Neurologic and other miscellaneous topics		
<b>Resources:</b> <ul style="list-style-type: none"> <li>• Reading assignments and learning Guides</li> <li>• Didactics/Lectures</li> <li>• Small Group/Sim Sessions</li> </ul>	<b>Where in the Clerkship it is Taught:</b> Simulation practicum, clinical service and didactic lectures	<b>How Assessed:</b> Written examination, simulation examination, clinical performance evaluation
<b>Specific: Respiratory:</b> Upon completion of the critical care clerkship, students should be able to: <ul style="list-style-type: none"> <li>• Demonstrate fundamental knowledge of acute respiratory failure including the differential diagnosis and treatment of acute hypoxemic respiratory failure and acute hypercapnic respiratory failure (MKS-1b, MKS-3a, MKS-3b)</li> <li>• Elucidate and describe an appropriate strategy to manage patients on mechanical ventilatory support including (MKS-1e, MKS-3a, MKS-3b) : <ol style="list-style-type: none"> <li>1. the use of non-invasive ventilation</li> <li>2. the basics of volume-controlled and pressure-controlled ventilation</li> <li>3. the trigger, target and cycle of a mechanically delivered breath during <ol style="list-style-type: none"> <li>a. assist/control ventilation</li> <li>b. synchronous intermittent mandatory ventilation</li> <li>c. pressure support ventilation</li> </ol> </li> <li>4. the ability to measure airway resistance, static compliance of the respiratory system and auto-PEEP</li> <li>5. the indications for PEEP</li> <li>6. the relationship between ventilator settings and hemodynamics</li> <li>7. the relationship between ventilator settings and arterial blood gases</li> <li>8. strategies to minimize complications of mechanical ventilation</li> <li>9. the approach to patients with obstructive lung disease and ARDS</li> <li>10. the process of weaning and extubation</li> <li>11. Recognize the range of pathogens responsible for hospital acquired pneumonia and design an appropriate empiric antimicrobial strategy to treat patients with hospital acquired pneumonia (MKS-1d, MKS-1e, MKS-3a, MKS-3b)</li> </ol> </li> </ul>		<b>Specific: Hemodynamic:</b> Upon completion of the critical care clerkship, students should be able to: <ul style="list-style-type: none"> <li>• Classify four categories of shock in terms of pathophysiology, hemodynamic profiles files and treatment (MKS-1b, MKS-1e) <ol style="list-style-type: none"> <li>1. hypovolemic shock</li> <li>2. distributive shock</li> <li>3. cardiogenic shock</li> <li>4. obstructive shock</li> </ol> </li> <li>• Choose suitable fluid replacement therapy and vasoactive drug support for patients with circulatory shock (MKS-1e, MKS-3b)</li> <li>• Administer appropriate therapy based on data obtained by central venous catheter, pulmonary artery catheters and ultrasound (PCMC-3)</li> <li>• List methodologies available to estimate cardiac output (MKS-3a, MKS-1a)</li> <li>• Demonstrate knowledge of the Fick formula for cardiac output (MKS-3a)</li> <li>• Demonstrate the ability to calculate systemic or pulmonary vascular resistance given the appropriate pressures across the system of interest and cardiac output (MKS-3a)</li> </ul>

***Specific Neurologic:***

Upon completion of the critical care clerkship, students should be able to:

- Prepare a plan to prevent, diagnose and treat delirium for patients during their ICU stay (PCMC-3)
- Recognize the importance of withholding of sedatives and analgesics when appropriate (MKS-1e, MKS-3b)

***Specific: Miscellaneous:***

Upon completion of the critical care clerkship, students should be able to:

- Prepare a plan of care for patients with gastrointestinal bleeding (PCMC-3)
- Describe the approach to fever including the diagnosis and management of hospital acquired infections and knowledge of noninfectious causes (MKS-3a, MKS-3b)
- Recognize the importance of venous thromboembolism prevention in the ICU (MKS-1f)
- Interpret single and mixed acid-base disorders in critically ill patients (MKS-1d, MKS-3a)
- Describe the causes of anemia in critically ill patients and the strategy for management of anemic patients (MKS-1b, MKS-3a, MKS-3b)
- Recognize the ethical, legal and medical aspects of withdrawal and withholding of life support and the appropriate use of the DNR order (PBMR-1)
- Describe the causes of thrombocytopenia in critically ill patients and the strategy for management of these patients (MKS-1b, MKS-3a, MKS-3b)