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## **MEDICAL INTENSIVE CARE UNIT ROTATION FOR SENIOR INFECTIOUS DISEASES FELLOWS**

### **Overview**

The Medical Intensive Care Unit (MICU) rotation for the senior infectious diseases fellow has several components. The key component is recognition and management of life-threatening infectious diseases illnesses. There is also a significant focus on management of nosocomial infections associated with MICU care and medical interventions and with abnormal hemodynamics and the differential diagnosis and management of different forms of shock.

Eligibility for or certification in critical care medicine is required for faculty admitting privileges to MICU. There is faculty involvement with fellows during this rotation by teaching faculty who are certified with special competence in critical care medicine.

Most patients will be admitted from the Emergency Department, but other significant sources of admissions include:

1. Survivors of cardiac resuscitation on the general floors – not surgical or pediatric patients.
2. Unstable patients from internal medicine, family medicine, neurology and obstetrics/gynecology services
3. Neurosurgical patients with non-traumatic brain injury such as intracranial hemorrhage from hypertension, subarachnoid hemorrhage, etc.
4. Transfers from other hospitals unable to provide the same level of critical care services

Numerous consultants may become involved in the management of the critically ill patient, the MICU team retains primary management responsibility, the MICU assigned teaching faculty retains primary responsibility as attending physician and the Infectious Diseases Senior Fellow is involved in the patient management as a junior attending consultant with the rounding teams.

### **Goals**

To teach the infectious diseases fellow the recognition and management of life threatening infectious disease conditions.

To teach the infectious diseases fellow the risks, recognition and avoidance of nosocomial infections associated with critical care medicine and invasive interventions.

To teach the infectious diseases fellow the recognition and differential diagnosis and management of sepsis syndrome and shock.

## **Objectives**

### **Patient Care**

- Demonstrate how to interview patients who may have impaired consciousness due to serious illness, or who are unable to communicate with speech due to intubation.
- Perform a comprehensive physical exam, with particular focus on airway, breathing, circulation, and neurologic function.
- Demonstrate the physical exam skills necessary to elicit subtle abnormalities in a setting where a comprehensive medical history may not be available.
- Discuss the potential nosocomial infectious complications associated with invasive procedures, to include Endotracheal intubation, central line placement from Subclavian, internal jugular, and femoral approaches, arterial line placement from radial, dorsalis pedis, and femoral approaches, lumbar punctures, Thoracentesis, and emergency tube thoracostomy and Swan Ganz.
- Discuss the potential nosocomial complications associated with the use extra ventricular drainage devices in management of the patient with increased intracranial pressure.
- Explain the consultants role in the coordination of care among all members of the health care team
- Perform as a consultant in the formulation of therapeutic and diagnostic plans

### **Medical Knowledge**

- Discuss infectious diseases complications associated with techniques of airway management, ie. non-invasive and invasive mechanical ventilation
- Discuss the recognition, differential diagnosis and management of shock, the severe inflammatory response syndrome (SIRS) and multiple system organ dysfunction.
- Discuss infectious complications associated with invasive devices
- Demonstrate the skill of reading and interpreting the infectious diseases medical literature as it relates to intensive care medicine

### **Practice Based Learning and Improvement**

- Identify deficiencies in one's knowledge, skills and attitudes in the care of infectious diseases in the ICU patient.
- Recognize error and accept constructive criticism.

## **Interpersonal Skills and Communication**

Fundamental skills:

- Communicate effectively with physician colleagues in the role as an infectious diseases consultant
- Communicate effectively with other physician specialties involved in the care of the patient

## **Professionalism**

- Demonstrate effective interactions with patients, families, colleagues and all members of the health care team.
- Demonstrate respect for alternative, but appropriate treatment plans.
- Describe methods to be sensitive and respectful when expressing concerns about alternative and inappropriate treatment plans.
- Educate student and resident colleagues.

## **System Based Practice**

- Discuss and coordinate the provision of multidisciplinary resources for the optimal care of the MICU patient.
- Discuss immediate and future financial cost to the patient.
- Educate the members of the multidisciplinary team in an effort to assure appropriate and quality care of MICU patients.
- Apply evidence based, cost conscious strategies in the care of the MICU patient.

## Knowledge to be assessed

To be an effective Infectious Diseases consultant involved in the care and management of critically ill patients, the ID fellow should have knowledge and understanding of the following medical illnesses/condition/topics, (though not exclusively) by the completion of their Medical Intensive Care Experiences:

<ul style="list-style-type: none"> <li>• Altitude illness</li> <li>• ID complications of Burns, smoke inhalation</li> <li>• <i>Cardiac</i> Acute pericarditis</li> <li>Acute valvular disruption Endocarditis</li> <li>• Shock</li> <li>• Decompression illness, air embolism</li> <li>• ID complications associated with Drug or alcohol overdose</li> <li>• <i>Endocrine</i> Adrenal insufficiency</li> <li>Infectious diseases complications associated with Diabetic ketoacidosis, hyperosmolar nonketotic diabetic coma</li> <li>• <i>Gastrointestinal</i> Acute Pancreatitis</li> <li>Infectious complications of Hepatic failure</li> <li>Hepatitis &amp; Fulminant hepatitis</li> <li>Intra-abdominal sepsis</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Hematologic</i> Bleeding disorder</li> <li>Disseminated intravascular coagulation</li> <li>Thrombotic thrombocytopenic purpura</li> <li>• <i>Infectious</i> Nosocomial infections</li> <li>Septic shock</li> <li>• <i>Management of critical illness</i> Multi-organ failure Prognosis/outcomes</li> <li>Withdrawal of support Multi-organ failure</li> <li>• Infectious complications of Near drowning</li> <li>• <b>Neurologic</b> Infectious complications associated with the management of Head trauma</li> <li>Meningitis and encephalitis</li> <li>Neuroleptic malignant syndrome</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Pulmonary</i> Infectious complications associated with Airway management (intubation, tracheostomy)</li> <li>Adult respiratory distress syndrome</li> <li>Nosocomial pneumonia</li> <li>Community-acquired Pneumonia</li> <li>• Pharmacology in the Critically Ill Adult</li> </ul>
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## **Methods of achieving objectives**

- Patient Care under the supervision of the assigned Attending
- Review of patient outcomes
- MICU faculty lead didactic sessions
- Fellow's review and presentation of relevant topics
- Core Conference Series
- Electronic databases and computerized resources (i.e., UF databases, Up-To-Date)
- Critical review of relevant journal and text publications.

## **Assessment tools**

- Supervising attending will monitor Fellow's interaction with patients and other health care team members
- Supervising attending will critique Resident's assessment and plan regarding patient's acute and chronic complaints/illnesses
- Supervising attending will monitor Resident's self-directed learning efforts
- Supervising attending will assess if the Resident has met the objectives detailed above
- Ancillary Staff will periodically assess Resident's professionalism.
- Supervising Attending will evaluate the faculty selected Resident end-of- rotation presentation on a critical care infectious diseases topic.

## **Evaluation process**

- Faculty and fellow review the goals and objectives at the beginning of the rotation. The fellow will sign an attestation statement verifying review of the goals and objectives.
- The supervising attending will provide verbal feedback throughout and at the completion of the MICU Rotation.
- Formal evaluation document completed and signed by the MICU Attending at the conclusion of the rotation and then reviewed with the fellow. Evaluation maintained by the Administrative office and copy is sent to the PD Infectious Diseases Fellowship.
- Resident signs attestation statement verifying review of evaluation.