Y4 Pediatric Critical Care (PICU)
Course ID: MED 997AK
Discipline: Medicine
Prerequisites: Year 4 standing
Available Sites: Saginaw
Duration: 4 weeks

Description
Students participate in a one-month elective rotation PICU service. Supervised by critical care physicians, fellows, and residents, students will be exposed to the care of critically ill children, including conditions such as pneumonia, asthma, bronchiolitis, sepsis, dehydration, trauma, and metabolic derangements. Students will gain fundamental knowledge of current techniques and treatment strategies, including hemodynamic monitoring, ventilator support, fluid and electrolyte management and vasopressor support.

Key Objectives
- Practice history and physical assessment skills required for determining the need for intensive care unit admission and treatment
- Develop a pathophysiology-based understanding of critical illness in children and how the understanding of physiology influences management and the treatment of critically ill children in the PICU.
- Formulate a differential diagnosis in the critically ill pediatric patient based on the clinical findings.
- Discuss the common etiologic agents of sepsis and meningitis of pediatric patients of varying ages and their presentation, evaluation, and management.
- Discuss the anatomy of the pediatric respiratory tract and the significance of this to airway emergencies.
- Discuss the presentation, evaluation, and management of pediatric upper and lower respiratory diseases, including: asthma, bronchiolitis, cystic fibrosis, and pneumonia.
- Demonstrate appropriate evaluation and management of diabetes mellitus in the pediatric population, including complications (esp. diabetic ketoacidosis).
- Discuss the presentation, differential diagnosis, evaluation, and management of acute renal failure.
- Discuss the presentation, evaluation, management, and complications of Kawasaki disease.
- Discuss the presentation, differential diagnosis, evaluation, and management of the pediatric patient with a bleeding disorder.
- Discuss the types of congenital heart disease, their presentation, and evaluation and management.
- Discuss the differential diagnosis, evaluation, and management of the pediatric patient with altered mental status.
- Discuss the indications, contraindications, and interactions of the pharmacologic agents of choice for the use in patients with: shock, sepsis, dysrhythmias, respiratory failure, congestive heart failure, hepatic failure, and renal failure.
• Be exposed to and gain a basic understanding of the emergency treatment and stabilization of critically ill children.
• Demonstrate appropriate history and physical examination skills for the critically ill pediatric patient.
• Formulate a differential diagnosis based on the clinical findings.
• Calculate the fluid and electrolyte requirements of the dehydrated and septic pediatric patient.
• Demonstrate appropriate evaluation and management of upper and lower respiratory diseases, including: asthma, bronchiolitis, cystic fibrosis, and pneumonia.
• Demonstrate appropriate evaluation and management of diabetes mellitus in the pediatric population, including its complications (esp. diabetic ketoacidosis).
• Observe or assist common diagnostic and therapeutic procedures (such as: oral endotracheal intubation, nasotracheal intubation, intraosseous line placement, central venous access, arterial line placement).
• Demonstrate the ability to correctly interpret data from hemodynamic monitoring, pulse oximetry, arterial blood gasses, end tidal CO2, and ICP monitors.
• Demonstrate proper initiation and subsequent management of the mechanically ventilated pediatric patient.
• Become familiar with standard ICU supportive care, including:
  - Inotropic Support
  - Sedation and Pain Control
  - Nutritional Support
  - Pharmacology
• Demonstrate an understanding of the ethical and legal principles applicable to the care of critically ill pediatric patients.
• Practice the rational use of laboratory, radiographic, and other diagnostic modalities in the management of the critically ill pediatric patient including discussion of this plan with the patients’ parents.
• Demonstrate effective communication skills when developing and carry out advance directives, facilitating family meetings, patient/family education, eliciting the patient’s illness story, cross cultural skills and facilitating treatment adherence.
• Demonstrate the ability to communicate well with patients and family. The student should demonstrate respect for the health beliefs of other cultures and understand how differing health beliefs affect behavior and medical care.

Assessment Method
College of Medicine standard elective assessment will be completed by supervising faculty at conclusion of elective clerkship.

Scheduling Information
Interested students should contact CMU College of Medicine Department of Distributed Clinical Education at CMEDDCE@cmich.edu.