



## Current Concepts in Pediatric Critical Care Sample Course Agenda

Day 1	
7:15 a.m. – 8:00 a.m.	Registration and submit pretest
8:00 a.m. – 8:15 a.m.	Welcome and Overview
8:15 a.m. – 9:00 a.m.	<p><b>Pediatric Vascular Neurological Controversies</b> <i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Understand the risks of cerebral vasospasm in children</li> <li>• Apply adult subarachnoid hemorrhage guidelines critically to the evaluation and management of children with cerebral vasospasm</li> <li>• Recognize the risk of brain injury in children before and after cardiac surgery and cardiopulmonary bypass</li> </ul>
9:00 a.m. – 9:45 a.m.	<p><b>Neuroprotective Strategies</b> <i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Describe neuro-injury in children</li> <li>• Outline the mechanisms of secondary neuronal injury</li> <li>• Identify conventional neuroprotective strategies</li> </ul>
9:45 a.m. – 10:30 a.m.	<p><b>Noninvasive and Invasive Hemodynamic Monitoring</b> <i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Describe the benefits and challenges of noninvasive hemodynamic monitoring</li> <li>• Outline the benefits and challenges of invasive hemodynamic monitoring</li> </ul>
10:30 a.m. – 10:45 a.m.	Break
10:45 a.m. – 11:30 a.m.	<p><b>Drug Dosing Considerations in Acute Kidney Injury and Renal Replacement Therapy</b> <i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Describe considerations for drug dosing in pediatric acute kidney injury (AKI)</li> <li>• Discuss the mechanisms for drug clearance in different dialysis modalities</li> <li>• Detail the effects of various dialysis modalities on pharmacotherapy in the pediatric intensive care unit (PICU)</li> </ul>

11:30 a.m. – 12:15 a.m.	<p><b>Transfusion Thresholds in Critically Ill Children</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Outline the epidemiological patterns of blood product transfusion in critically ill children</li> <li>• Review existing guidelines for transfusion thresholds in critically ill children</li> <li>• Recognize key knowledge gaps and opportunities for future investigation related to transfusion strategies in critically ill children</li> </ul>
12:15 p.m. – 1:15 p.m.	Lunch
1:15 p.m. – 2:00 p.m.	<p><b>Phenotyping Sepsis-Induced Multiple Organ Dysfunction Syndrome</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Outline the proposed sepsis-induced multiple organ failure (MOF) phenotypes, including thrombocytopenia-associated multiple organ failure, sequential multiple organ failure, and immunoparalysis</li> <li>• Explore the macrophage activation syndrome</li> </ul>
2:00 p.m. – 2:45 p.m.	<p><b>Procedural Sedation</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Explore the role of the pediatric critical care physician in procedural sedation</li> <li>• Outline training needs and team structure</li> <li>• Review approaches to procedural sedation</li> </ul>
2:45 p.m. – 3:00 p.m.	Break
3:00 p.m. – 3:45 p.m.	<p><b>Preventing Healthcare-Acquired Harm in the PICU</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Examine primary and adjunct strategies to prevent healthcare-acquired infections, adverse drug events, unplanned extubations, pressure injuries, serious safety events, and employee injuries</li> <li>• Appraise the impact of hospital-acquired conditions (HACs) on children, families, payors, and institutions</li> </ul>
3:45 p.m. – 4:30 p.m.	<p><b>Complications of Vascular Access Devices</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Review common types of vascular access devices used in pediatric patients</li> <li>• Outline complications related to both peripheral and central vascular access devices</li> <li>• Identify evidence-based management and prevention strategies for vascular access complications</li> </ul>
4:30 p.m. – 4:45 p.m.	Questions and adjournment

Day 2	
7:30 a.m. – 8:00 a.m.	Recap of Day 1
8:00 a.m. – 8:45 a.m.	<p><b>Difficult Airway Management in the PICU</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Describe preparations needed to manage a difficult airway in the pediatric intensive care unit (PICU).</li> <li>• Discuss creation of a systematic approach to a difficult airway in a PICU setting.</li> </ul>
8:45 a.m. – 9:30 a.m.	<p><b>Ventilator Waveforms</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Review common ventilator modes</li> <li>• Focus on the square-flow waveform</li> <li>• Identify ventilator loops</li> </ul>
9:30 a.m. – 10:15 a.m.	<p><b>Management of Diabetic Ketoacidosis in the PICU: Updates and Controversies</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Describe updated diagnostic criteria for pediatric diabetic ketoacidosis</li> <li>• Review fluid management strategies in pediatric diabetic ketoacidosis</li> <li>• Examine controversies surrounding diagnosis and management of cerebral edema in pediatric diabetic ketoacidosis</li> </ul>
10:15 a.m. – 10:30 a.m.	Break
10:30 a.m. – 11:15 a.m.	<p><b>Chronic Critical Illness/Medical Complexity in the PICU</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Outline definitions of medical complexity and chronic critical illness</li> <li>• Assess epidemiology factors in chronically critically ill children, such as volume, demographics, patterns of use, and costs</li> <li>• Examine outcomes in chronically critically ill children</li> </ul>
11:15 a.m. – 12:00 p.m.	<p><b>Thrive and the ABCDEF Bundle</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Describe the ABCDEF bundle and its applications in the pediatric intensive care unit (ICU)</li> <li>• Summarize current evidence supporting each component of the ABCDEF bundle in pediatrics</li> </ul>
12:00 p.m. – 1:00 p.m.	Lunch
1:00 p.m. – 1:45 p.m.	<p><b>Anticoagulation Considerations for Pediatric ECMO</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Review pathophysiology of extracorporeal membrane oxygenation (ECMO)-induced coagulopathy (EIC)</li> <li>• Describe practical approaches to implementing a comprehensive hemostasis and anticoagulation monitoring protocol</li> </ul>

1:45 p.m. – 2:30 p.m.	<p><b>Updates on the Management of Iatrogenic Drug Dependence</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Select prevention and treatment options for opioid withdrawal</li> <li>• Recognize prevention and treatment options for dexmedetomidine withdrawal</li> <li>• Identify considerations with validated tools to assess iatrogenic drug withdrawal</li> </ul>
2:30 p.m. – 2:45 p.m.	Break
2:45 p.m. – 3:30 p.m.	<p><b>The 2017 Nutrition Guideline</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Describe the newest recommendations for the provision of nutrition to critically ill children</li> <li>• Summarize the evidence behind the nutrition guidelines</li> <li>• Highlight areas where future research is needed</li> </ul>
3:30 p.m. – 4:15 p.m.	<p><b>Pharmacologic and Mechanical Therapy for Pediatric Heart Failure</b></p> <p><i>Objectives:</i></p> <ul style="list-style-type: none"> <li>• Review pathophysiologic characteristics of pediatric heart failure</li> <li>• Review the current medical therapeutic approach to pediatric heart failure</li> <li>• Review the current mechanical circulatory support options for the pediatric patient in decompensated heart failure</li> </ul>
4:15 p.m. – 4:30 p.m.	Posttest and adjournment