

## CVICU

### ACGME Competency-based Goals and Objectives

#### ROTATION

#### Cardiovascular Critical Care Unit, PGY 4, 5, 6

#### Goal 1. Develop a comprehensive and physiology-based understanding of evolving illness in children with congenital heart disease

Fellow Objectives	Instructional Strategies	Assessment of Competence	ACGME Competency Goals
1. Incorporate PE findings into development of plan of care <ul style="list-style-type: none"> <li>• Circulatory sufficiency (PGY4,5,6)</li> <li>• Lung exam (PGY4,5,6)</li> <li>• Mental status (PGY4,5,6)</li> <li>• Pain assessment (PGY4,5,6)</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-rounds and rounds with feedback on rounds</li> <li>• Patient Care</li> <li>• Textbook Reading</li> <li>• Didactic Conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Attending feedback in the course of patient care</li> <li>• Faculty evaluations</li> <li>• Assessment of clinical decisions</li> <li>• Observation on Rounds</li> <li>• Annual In-service evaluation</li> </ul>	<i>PC - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i>
2. Incorporate data from bedside monitoring equipment in development of plan of care <ul style="list-style-type: none"> <li>• Pulse oximetry (PGY4,5,6)</li> <li>• Cardiac tracing (PGY5,6)</li> <li>• Cardiac rhythm (PGY5,6)</li> <li>• End tidal CO<sub>2</sub> (PGY5,6)</li> <li>• Invasive and non-invasive BP (PGY4,5,6)</li> <li>• CVP (PGY4,5,6)</li> <li>• Cerebral oxygenation (PGY 5,6)</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-rounds and rounds with feedback on rounds</li> <li>• Didactic conferences</li> <li>• Textbook Reading</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation followed by timely verbal feedback</li> <li>• Procedure documentation by fellows</li> <li>• Written faculty evaluations</li> <li>• Assessment of clinical decisions</li> <li>• Observation on Rounds</li> <li>• Annual In-service evaluation</li> <li>• Presentation at conferences</li> </ul>	<i>PC - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i> <i>MK-Demonstrate knowledge of evolving science and apply the knowledge to patient care</i>
3. Incorporate information from ancillary diagnostic studies into the construction of the therapeutic plan. <ul style="list-style-type: none"> <li>• Review radiology results prior to Rounds (PGY4,5,6)</li> <li>• Review laboratory results prior to Rounds (PGY4,5,6)</li> <li>• Demonstrate understanding of echocardiographic results (PGY5,6)</li> <li>• Demonstrate understanding of cardiac catheterization results (PGY5,6)</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-rounds and rounds with feedback on rounds</li> <li>• Didactic conferences</li> <li>• Radiology Conference</li> <li>• Textbook Reading</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation during rounds with on-the-spot verbal feedback</li> <li>• Observation on Rounds</li> <li>• Annual In-service evaluation</li> <li>• Presentation at conferences</li> </ul>	<i>PC - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i> <i>MK-Demonstrate knowledge of evolving science and apply the knowledge to patient care</i>

#### Goal 2. Develop a comprehensive and physiology-based understanding of emerging organ system failure and insufficiency that requires intensive care.

Fellow Objectives	Instructional Strategies	Assessment of Competence	ACGME Competency Goals
1. Demonstrate the ability to identify PE characteristics and initiate care for a patient with respiratory failure	<ul style="list-style-type: none"> <li>• Participation in patient care or rounds</li> <li>• Didactic conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Review of resident orders</li> <li>• Direct observation of patient care</li> <li>• Presentation at conferences</li> </ul>	<i>PC - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i>

<ul style="list-style-type: none"> <li>Initial laboratory studies (PGY4,5,6)</li> <li>Initial fluid management (PGY4,5,6)</li> <li>Initial Ventilator management (PGY4,5,6)</li> <li>Adjustments in ventilator management (PGY4,5,6)</li> </ul>	<ul style="list-style-type: none"> <li>Review of (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/11_airway_management.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/11_airway_management.pdf</a>)</li> <li>(<a href="http://peds.stanford.edu/Rotations/picu/pdfs/12_mechanical_ventilation.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/12_mechanical_ventilation.pdf</a>)</li> </ul>	<ul style="list-style-type: none"> <li>Annual In-service evaluation</li> </ul>	MK - <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i>
<p>2. Demonstrate the ability to identify PE characteristics and care for a patient with heart failure</p> <ul style="list-style-type: none"> <li>Initial laboratory studies (PGY4,5,6)</li> <li>Initial fluid management (PGY4,5,6)</li> <li>Initiation of appropriate vasoactive infusions (PGY5,6)</li> <li>Initiation of appropriate ancillary diagnostic testing (PGY5,6)</li> <li>Indications and initiation of ventricular assist devices (PGY 6)</li> </ul>	<ul style="list-style-type: none"> <li>Participation in patient care or rounds</li> <li>Didactic conferences</li> <li>Textbook reading</li> </ul>	<ul style="list-style-type: none"> <li>Review of resident orders</li> <li>Direct observation of patient care</li> <li>Presentation at conferences</li> <li>Annual In-service evaluation</li> </ul>	PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i> MK - <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i>
<p>3. Demonstrate knowledge of the physiologic consequences and care of a patient with renal failure</p> <ul style="list-style-type: none"> <li>Electrolyte disturbance (PGY4,5,6)</li> <li>Fluid overload (PGY4,5,6)</li> <li>Hematologic disturbance (PGY5,6)</li> <li>Hypertension (PGY4,5,6)</li> <li>Immune compromise (PGY5,6)</li> <li>Initiation and adjustment of renal replacement therapy (PGY6)</li> </ul>	<ul style="list-style-type: none"> <li>Participation in patient care</li> <li>Reading “Liver Failure” (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/20_liver_failure.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/20_liver_failure.pdf</a>)</li> <li>Didactic conference</li> <li>Rogers’ Textbook of Pediatric Critical Care</li> <li>Fuhrman’s Textbook of Pediatric Critical Care</li> </ul>	<ul style="list-style-type: none"> <li>Direct observation</li> <li>Annual In-service evaluation</li> </ul>	PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i> MK - <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i>
<p>4. List the common and contrasting characteristics of septic, cardiogenic, and hypovolemic shock (PGY 4,5,6)</p>	<ul style="list-style-type: none"> <li>Reading: “Shock”, “Shock Tables” (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/16_shock.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/16_shock.pdf</a>)</li> <li>Rogers’ Textbook of Pediatric Critical Care</li> <li>Fuhrman’s Textbook of Pediatric Critical Care</li> </ul>	<ul style="list-style-type: none"> <li>Direct observation during rounds with verbal feedback</li> <li>Annual in-service evaluation</li> </ul>	MK— <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i>
<b>Goal 3. Demonstrate competency in resuscitation and stabilization of an acutely decompensating or arresting child with heart disease</b>			
<b>Fellow Objectives</b>	<b>Instructional Strategies</b>	<b>Assessment of Competence</b>	<b>ACGME Competency Goals</b>
1. List differences between oxygen delivery devices and their indications	<ul style="list-style-type: none"> <li>Independent reading: “Airway Management”</li> </ul>	<ul style="list-style-type: none"> <li>Discussion during lecture</li> <li>Intensive reviews of performance</li> </ul>	PC - <i>Provide effective health care services</i> MK - <i>Demonstrate knowledge evolving sciences and</i>

<ul style="list-style-type: none"> <li>• Standard nasal cannula (PGY4,5,6)</li> <li>• High flow nasal cannula (PGY4,5,6)</li> <li>• Simple face mask (PGY4,5,6)</li> <li>• Partial rebreathing mask (PGY4,5,6)</li> <li>• Non-rebreathing mask (PGY4,5,6)</li> <li>• Bag-mask ventilation (PGY4,5,6)</li> </ul>	<p><a href="http://peds.stanford.edu/Rotations/picu/pdfs/11_airway_management.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/11_airway_management.pdf</a></p> <ul style="list-style-type: none"> <li>• Participation in patient care</li> <li>• Simulation Training</li> </ul>	<p>and decisions during codes</p> <ul style="list-style-type: none"> <li>• Direct observation and faculty feedback</li> </ul>	<p><i>apply this knowledge to patient care</i></p>
<p>2. Demonstrate correct technique in endotracheal intubation, including preparation for intubation</p> <ul style="list-style-type: none"> <li>• Selection of appropriate equipment (blade type and size, ETT, suction) (PGY4,5,6)</li> </ul>	<ul style="list-style-type: none"> <li>• Independent reading: “Airway Management” (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/11_airway_management.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/11_airway_management.pdf</a>)</li> <li>• Bedside care</li> <li>• Advanced Airway Workshop</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Simulation training with feedback</li> </ul>	<p>PC - <i>Provide effective health care services</i>  MK - <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i></p>
<p>3. Run/participate in a code or mock code addressing one of the following scenarios required advanced life support</p> <ul style="list-style-type: none"> <li>• Bradycardia with poor perfusion (PGY4,5,6)</li> <li>• Ventricular fibrillation (PGY4,5,6)</li> <li>• Ventricular tachycardia (PGY4,5,6)</li> <li>• Pulseless ventricular tachycardia (PGY4,5,6)</li> <li>• Asystole/PEA (PGY4,5,6)</li> </ul>	<ul style="list-style-type: none"> <li>• Mock codes</li> <li>• CAPE (prior to start of rotation)</li> <li>• PALS manual</li> <li>• PALS cards</li> <li>• Rogers’ Textbook of Pediatric Critical Care</li> <li>• Fuhrman’s Textbook of Pediatric Critical Care</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation with on-the-spot feedback from code proctor</li> </ul>	<p>MK - <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i>  PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i>  ICS - (a) <i>Communicate effectively with physicians, other health professionals, and health related agencies;</i> (b) <i>Work effectively as a member or leader of a health care team</i></p>
<p>4. Describe the management plan of a patient in shock tailoring treatment to etiology</p> <ul style="list-style-type: none"> <li>• Prompt fluid resuscitation as indicated (PGY4,5,6)</li> <li>• Initiation of inotropic support (PGY5,6)</li> <li>• Complementary therapies (e.g., antibiotics (PGY4,5,6)</li> <li>• Indications for surgical intervention (e.g., cardiac obstructive shock) (PGY5,6)</li> <li>• Indications for mechanical intervention (e.g., ECMO, VAD) (PGY6)</li> </ul>	<ul style="list-style-type: none"> <li>• Reading: “Shock”, “Shock Tables” (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/16_shock.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/16_shock.pdf</a>)</li> <li>• Rogers’ Textbook of Pediatric Critical Care</li> <li>• Fuhrman’s Textbook of Pediatric Critical Care</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation during rounds with on-the-spot verbal feedback</li> <li>• Written faculty evaluations</li> </ul>	<p>MK - <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i>  PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i></p>
<p>5. For the commonly used inotropes, vasopressors, and anti-arrhythmics, identify their indications, pharmacology</p>	<ul style="list-style-type: none"> <li>• Independent reading: “Inotropes and Vasopressors”, “Inotropes”</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation during rounds with verbal feedback</li> </ul>	<p>MK - <i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i>  PC - <i>Provide patient care that is compassionate,</i></p>

and risks	<a href="http://peds.stanford.edu/Rotations/picu/pdfs/15_inotropes_vasopressors.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/15_inotropes_vasopressors.pdf</a>		<i>appropriate, and effective for the treatment of health problems</i>
<ul style="list-style-type: none"> <li>• Dopamine (PGY4,5,6)</li> <li>• Dobutamine (PGY4,5,6)</li> <li>• Epinephrine (PGY4,5,6)</li> <li>• Norepinephrine (PGY4,5,6)</li> <li>• Milrinone (PGY4,5,6)</li> <li>• Vasopressin (PGY4,5,6)</li> <li>• Phenylephrine (PGY4,5,6)</li> <li>• Anti-arrhythmics (PGY6)</li> </ul>	<ul style="list-style-type: none"> <li>• Bedside care</li> <li>• Simulation Training</li> <li>• Rogers' Textbook of Pediatric Critical Care</li> <li>• Fuhrman's Textbook of Pediatric Critical Care</li> </ul>		
6. Demonstrate the correct use of a defibrillator	<ul style="list-style-type: none"> <li>• Supervisor demonstration</li> <li>• Simulation Training</li> </ul>	<ul style="list-style-type: none"> <li>• Direct observation</li> </ul>	<p>MK—<i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i></p> <p>PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i></p>

**Goal 4. Develop an understanding of and participate in the post-operative care of children with congenital heart disease**

Fellow Objectives	Instructional Strategies	Assessment of Competence	ACGME Competency Goals
1. Incorporate PE findings, bedside monitoring data, and ancillary diagnostic studies into the development of plan of care	<ul style="list-style-type: none"> <li>• Pre-rounds and rounds with feedback on rounds</li> <li>• Patient Care</li> <li>• Textbook Reading</li> <li>• Didactic Conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Attending feedback in the course of patient care</li> <li>• Faculty evaluations</li> <li>• Assessment of clinical decisions</li> <li>• Observation on Rounds</li> <li>• Annual In-service evaluation</li> </ul>	<p>PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i></p> <p>MK—<i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i></p>
<ul style="list-style-type: none"> <li>• Physical exam assessment of cardiorespiratory status (PGY4,5,6)</li> <li>• Laboratory data (PGY4,5,6)</li> <li>• Radiographic data (PGY4,5,6)</li> <li>• Bedside monitoring data (PGY5,6)</li> <li>• Echocardiographic data (PGY5,6)</li> <li>• Cardiac catheterization data (PGY5,6)</li> </ul>			
2. Demonstrate understanding of the effects of cardiopulmonary bypass on other organ systems	<ul style="list-style-type: none"> <li>• Patient Care</li> <li>• Textbook Reading</li> <li>• Didactic Conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Attending feedback in the course of patient care</li> <li>• Assessment of clinical decisions</li> <li>• Observation on Rounds</li> <li>• Annual In-service evaluation</li> </ul>	<p>PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i></p> <p>MK—<i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i></p>
<ul style="list-style-type: none"> <li>• Lung injury (PGY4,5,6)</li> <li>• Myocardial depression (PGY4,5,6)</li> <li>• Kidney injury (PGY4,5,6)</li> <li>• Coagulopathy (PGY4,5,6)</li> <li>• Hepatic injury (PGY4,5,6)</li> <li>• Neurologic injury (PGY4,5,6)</li> </ul>			
3. Recognize common dysrhythmias and develop plan of care for patients with dysrhythmias	<ul style="list-style-type: none"> <li>• Pre-rounds and rounds with feedback on rounds</li> <li>• Patient Care</li> <li>• Textbook Reading</li> <li>• Didactic Conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Attending feedback in the course of patient care</li> <li>• Faculty evaluations</li> <li>• Assessment of clinical decisions</li> <li>• Observation on Rounds</li> </ul>	<p>PC - <i>Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</i></p> <p>MK—<i>Demonstrate knowledge evolving sciences and apply this knowledge to patient care</i></p>
<ul style="list-style-type: none"> <li>• Basic interpretation of ECG (PGY4,5,6)</li> </ul>			

<ul style="list-style-type: none"> <li>Differentiation between various tachycardias (Reentry, Afib, EAT) (PGY6)</li> <li>Pharmacology and risks of common anti-arrhythmic medications (PGY5,6)</li> <li>Initiation of anti-arrhythmic medications (PGY6)</li> <li>Demonstration of basic knowledge of pacemaker physiology (PGY6)</li> </ul>		<ul style="list-style-type: none"> <li>Annual In-service evaluation</li> </ul>	
<p>4. Demonstrate knowledge of the use of cardiac mechanical support devices</p> <ul style="list-style-type: none"> <li>Describe basic physiology and differences between various assist devices (PGY4,5,6)</li> <li>Describe indications and risks for various assist devices (PGY5,6)</li> <li>Formulate plan of care for patients with mechanical assist devices (PGY6)</li> </ul>	<ul style="list-style-type: none"> <li>ECMO Workshops</li> <li>Patient Care</li> <li>Textbook Reading</li> <li>Didactic Conferences</li> </ul>	<ul style="list-style-type: none"> <li>Observation on Rounds with direct attending feedback</li> <li>ECMO Course Testing</li> <li>Annual In-service evaluation</li> </ul>	<p>PC - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</p> <p>MK—Demonstrate knowledge evolving sciences and apply this knowledge to patient care</p>
<p>5. Directly participate as the primary physician in the post-operative care of patients with congenital heart disease</p> <ul style="list-style-type: none"> <li>Communicate daily patient plan of care to a multidisciplinary team (PGY4,5,6)</li> <li>Formulate daily patient plan of care using available data (PGY5,6)</li> <li>Communicate plan of care to family members (PGY4,5,6)</li> <li>Sequential reassessment of patient and adjustment of plan of care as necessary (PGY4,5,6)</li> </ul>	<ul style="list-style-type: none"> <li>Patient Care</li> <li>Rounds and Pre-rounds</li> <li>Attending example</li> <li>Didactic Conferences</li> </ul>	<ul style="list-style-type: none"> <li>Observation on Rounds with direct attending feedback</li> <li>Written faculty evaluations</li> <li>360 evaluations</li> <li>Written family evaluations</li> </ul>	<p>PC - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems</p> <p>P—Demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles</p> <p>PLI – Evaluate your care of patients, appraise scientific evidence, and improve care through self-evaluation and life-long learning</p> <p>SBP – Be aware and responsive to the larger context of health care. Call effectively on the resources in the system to provide optimal care.</p> <p>ICS – Communicate effectively with patients, families, and the public as appropriate across a broad range of socioeconomic and cultural backgrounds</p>

**Goal 5: Demonstrate competency in handling end-of-life issues**

Fellow Objectives	Instructional Strategies	Assessment of Competence	ACGME Competency Goals
<p>1. Discuss the considerations involved in decision to withdraw support</p> <ul style="list-style-type: none"> <li>Recognize when hospice care is appropriate (PGY5,6)</li> <li>Describe use of the multidisciplinary team (e.g., subspecialty services, chaplain, hospice, ethics committee)</li> </ul>	<ul style="list-style-type: none"> <li>Attending example</li> <li>Reading “End-of-Life Issues” (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/28_end_of_life_issues.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/28_end_of_life_issues.pdf</a>)</li> </ul>	<ul style="list-style-type: none"> <li>Observation in the context of patient care</li> </ul>	<p>P—Demonstrate commitment to carrying out professional responsibilities and adherence to ethical principles</p> <p>PLI – Evaluate your care of patients, appraise scientific evidence, and improve care through self-evaluation and life-long learning</p> <p>SBP – Be aware and responsive to the larger context of health care. Call effectively on the resources in the</p>

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(PGY4,5,6)

*system to provide optimal care.*

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2. Discuss culture-specific context to end-of-life decision making (PGY5,6)	<ul style="list-style-type: none"><li>• Attending example</li></ul>	<ul style="list-style-type: none"><li>• Observation in the context of patient care</li></ul>	<i>ICS – Communicate effectively with patients, families, and the public as appropriate across a broad range of socioeconomic and cultural backgrounds</i>
3. Demonstrate understanding of appropriate timing of discussions with family regarding DNI/DNR status (allowing for natural death) (PGY5,6)	<ul style="list-style-type: none"><li>• Attending example</li><li>• Reading “End-of-Life Issues” (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/28_end_of_life_issues.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/28_end_of_life_issues.pdf</a>)</li></ul>	<ul style="list-style-type: none"><li>• Observation in the context of patient care</li></ul>	<i>ICS - (a) Communicate effectively with physicians, other health professionals, and health related agencies; (b) Work effectively as a member or leader of a health care team</i>
4. Demonstrate skill in working with team to support end-of-life transition <ul style="list-style-type: none"><li>• Involve palliative care team (PGY4,5,6)</li><li>• Attendance at family care conferences (PGY4,5,6)</li><li>• Participate in care conferences (PGY5,6)</li></ul>	<ul style="list-style-type: none"><li>• Attending example</li><li>• Patient care</li><li>• Reading “End-of-Life Issues” (<a href="http://peds.stanford.edu/Rotations/picu/pdfs/28_end_of_life_issues.pdf">http://peds.stanford.edu/Rotations/picu/pdfs/28_end_of_life_issues.pdf</a>)</li></ul>	<ul style="list-style-type: none"><li>• Observation in the context of patient care</li></ul>	<i>SBP - Be aware and responsive to the larger context of health care. Call effectively on the resources in the system to provide optimal care. ICS - (a) Communicate effectively with physicians, other health professionals, and health related agencies; (b) Work effectively as a member or leader of a health care team</i>

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