

1905 Pediatric Cardiac Critical Care

Course: Pediatric Cardiac Critical Care Course Number: PED 1905

Department: Pediatrics

Faculty Coordinator: Josh Koch, MD

Assistant Faculty Coordinators: N/A

UTSW Education Coordinator Contact: Anthony Lee (Anthony.Lee@UTSouthwestern.edu)

Hospital: (Location of rotation) Children's Medical Center

Periods Offered: Periods 1-12

Length: 4 weeks

Max # of Students: 2 (Post Clerkship Students)

First Day Contact: CVICU Attending or CVICU Fellow on duty

First Contact Time: 7:00am

First Day Location: Children's Main Hospital CVICU 3rd Floor, D Tower (*Physicians Touchdown*)

Prerequisites: PED 1801 Pediatric Core Clerkship

I. Course Description

Students will be integral members of an ICU team providing comprehensive pediatric cardiac critical care to neonates, infants, and children with congenital and acquired heart disease. Each student will be assigned 1-3 patients, and will have the primary responsibility for these patients under the supervision of a CICU faculty member. Students will participate in post-operative care, read material relevant to their patient's condition and attend scheduled clinical conferences.

<u>Goals</u>	<u>Objectives</u>	<u>Assessment Methods</u>
<p>Patient Care: Students, together with supervising faculty, must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.</p>	<ul style="list-style-type: none"> Gather essential and accurate information about their patients. <i>Examples: history, intercurrent problems, physical examination, results of pertinent laboratory tests and data from physiologic monitors.</i> Together with the CICU attending and fellow/nurse practitioner, make informed recommendations about diagnostic and therapeutic interventions. <i>Example: Determine the need for echocardiography or cardiac catheterization in patients with congenital heart disease.</i> Together with the CICU attending and fellow/nurse/practitioner, communicate the plan of care to 	<ul style="list-style-type: none"> Quality of Medical Records entries Skills evaluation from direct observation.

1905 Pediatric Cardiac Critical Care

	<p>parents. <i>Example: Explain the timing of surgery for a child with congenital heart disease.</i></p> <ul style="list-style-type: none"> • Work with health care professionals, including those from other disciplines, to provide patient-focused care, and develop/carry out patient management plans. <i>Examples: Initiating respiratory care or mechanical ventilation, inotropic support, arrhythmia therapy, nursing/physical therapy.</i> 	
<p>Medical Knowledge: Students must demonstrate knowledge about established biomedical and clinical sciences and the application of this knowledge to patient care.</p>	<ul style="list-style-type: none"> • Learn the indications and physical assessment skills required for determining the need for cardiac intensive care unit admission and treatment. • Develop the skills required to assimilate and critically evaluate historical, physical, physiologic, and laboratory data, and to present these data in an organized and prioritized manner. • Attempt interpretation of all data pertinent to the patient's cardiac function, through development of the following skills: <ul style="list-style-type: none"> ○ Focused physical examination – recognition of signs of congestive heart failure, cyanosis, and arrhythmias. ○ Recognition of the pathophysiologic effects of shunt lesions, pulmonary hypertension, valvar obstructions, and myocardial dysfunction. ○ Interpretation of chest roentgenograms to identify cardiac enlargement, characteristic cardiac silhouettes, and abnormal pulmonary markings. ○ Interpretation of electrocardiographic tracings with reference to rhythm abnormalities, pediatric myocardial ischemia, etc. ○ Interpretation of the hemodynamic findings of a cardiac catheterization report. ○ Interpretation of the findings of an echocardiography report. 	<ul style="list-style-type: none"> • Each student is required to create a case presentation and to present it to the faculty and fellows during the rotation. It is recommended that students present an interesting case they encountered during their rotation. However, they are also permitted to present on a topic of interest that relates to pediatric NICU. The presentation will be given in the designated department conference room.

1905 Pediatric Cardiac Critical Care

	<ul style="list-style-type: none"> • Develop an understanding of the natural history of various forms of congenital heart disease and the indications for cardiac surgery and/or catheter intervention. • Develop a pathophysiology based understanding of common congenital heart lesions and conditions, including but not limited to: <ul style="list-style-type: none"> ○ Atrial septal defect ○ Ventricular septal defect ○ Atrioventricular canal ○ Patent ductus arteriosus ○ Tetralogy of Fallot ○ Hypoplastic left heart syndrome / single ventricle physiology ○ Cardiac tamponade ○ Post-cardiopulmonary bypass SIRS ○ Myocarditis / cardiomyopathy ○ Ventricular tachycardia ○ Supraventricular tachycardia ○ Cardiopulmonary interaction • Gain a basic understanding of the preoperative and postoperative management and stabilization of children with critical heart disease. Treatment modalities to which students will be exposed include: <ul style="list-style-type: none"> ○ PGE infusion ○ Inhaled nitric oxide ○ Temporary pacing ○ Mechanical ventilation (and cardiopulmonary interaction) ○ Inotropic support ○ Sedation and pain control ○ Nutritional support • Gain experience in dealing with the family, social, economic, and ethical issues related to critical cardiac illness in childhood. 	
<p>Interpersonal and Communication Skills: Students must be able to demonstrate interpersonal and communication skills that result in effective information exchange with CICU team members and patients and their families.</p>	<ul style="list-style-type: none"> • Give clear, concise, well-organized case presentations, exchange patient information effectively with members of the team (<i>e.g., nurses, residents, and fellow</i>), work effectively with other members when indicated, and participate in rounds. • Explain complex treatments to parents without medical jargon. • Communicate effectively during rounds. 	<ul style="list-style-type: none"> • Observations of faculty and staff.
<p>Practice-Based Learning and Improvement:</p>	<ul style="list-style-type: none"> • Locate and assimilate evidence from scientific studies related to their 	<ul style="list-style-type: none"> • Each student is required to create a case presentation

1905 Pediatric Cardiac Critical Care

<p>Students must be able to assimilate scientific evidence and improve their patient care practices.</p>	<p>patients' health problems. <i>Example: trials of therapy for congestive heart failure.</i></p> <ul style="list-style-type: none"> Use information technology to manage information, access on-line medical information; and support their education. <i>Example: use electronic medical record to access laboratory and physiologic information.</i> 	<p>and to present it to the faculty and fellows during the rotation. It is recommended that students present an interesting case they encountered during their rotation. However, they are also permitted to present on a topic of interest that relates to pediatric NICU. The presentation will be given in the designated department conference room.</p> <ul style="list-style-type: none"> Critical review of a relevant article.
<p>Professionalism: Medical students must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.</p> <p>Students must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.</p>	<ul style="list-style-type: none"> Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and their families that supersedes self-interest; accountability to patients and the profession, and a commitment to excellence and on-going professional development. <i>Example: Willingness to seek additional patients for evaluation.</i> Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care and confidentiality of patient information. Demonstrate sensitivity and responsiveness to patients' or their family's culture, age, gender and disabilities. 	<ul style="list-style-type: none"> Observations of faculty and staff.

II. Methods of Instruction

Didactic:

- Tuesday:** PICU Conference (noon) and Case Conference (1:00 PM)
- Wednesday:** 5:00 PM Cardiac Surgery Conference (next week's cases)
- Thursday:** 7:30 AM Cardiology Research/Clinical Conference
1:00 PM CICU Case Review

Clinical:

- Students are expected to arrive at latest by 6:30 am in order to be prepared for 7:30 am rounds with the CICU faculty and surgeons.
- Afternoon rounds generally occur between 4:00-5:00 pm and are conducted by the on-call CICU fellow or nurse practitioner.

1905 Pediatric Cardiac Critical Care

- Students are expected to take call at least weekly, depending on the surgical schedule. The goal is to take call when their patients have surgery as well as on evenings when particularly complex cases are performed (i.e. Norwood Procedure). This should be discussed between the student and the attending intensivist on service.

III. Overview of Student Responsibilities

- Evaluate patients, present to attending, and follow until discharge.
- Students are expected to take primary responsibility for their patients with supervision by the residents, fellows, and faculty members.

IV. Method of Evaluation of Students and Requirements

Pass-fail grades; there are no examinations. Evaluations of the student by the faculty will be based on achievement of the stated objectives of the course. This will be assessed by the student's preparation, fund of knowledge, participation in rounds, and participation on call.