

UNIVERSITY OF MICHIGAN HEALTH SYSTEM · DEPARTMENT OF EMERGENCY MEDICINE
PEDIATRIC EMERGENCY MEDICINE FELLOWSHIP PROGRAM

Rotation: Pediatric Cardiology
Institution: University of Michigan Mott Children's Hospital
Duration: Two (2) to Four (4) Weeks
Fellow Training Year: EM trained fellow/Subspecialty rotation (Year 1 or 2)
PD trained fellow/Elective

Supervising Faculty: Aimee Armstrong, MD

EDUCATIONAL GOALS:

1. Fellows will recognize and manage infants, children and adolescents presenting to the ED with congenital and acquired heart disease, including (a)cyanotic heart conditions, hypoplastic left heart syndrome, heart failure, hypertrophic cardiomyopathy and inflammatory conditions (ex. Kawasaki disease, Myocarditis/Pericarditis). *Competencies: MK, PC*
2. Fellows will recognize and manage infants, children and adolescents presenting to the ED presenting with arrhythmias, hyper/hypotensive emergencies, chest pain & syncope. *Competencies: MK, PC*
3. Fellows will demonstrate proficiency in cardiovascular exam and evaluation including reading pediatric ECG, understanding indications for and interpretation of diagnostic testing (ex echocardiography), and need for invasive monitoring. *Competencies: MK, PC, PBLI, SBP*
4. Fellows will learn indications for routine, urgent, and emergent referrals to pediatric cardiologists for patients presenting with common pediatric emergency complaints. *Competencies: PC, IC, P, SBP, PBLI*

EDUCATIONAL OBJECTIVES:

1. Demonstrate skill in pediatric cardiovascular-specific history & cardiovascular examination. *Competencies: PC, MK*
 - Perform complete cardiovascular physical exam
 - Recognize important features of exam besides auscultation
 - Pulses, Four extremity blood pressures, respiratory effort
 - Auscultate heart murmurs
 - Be able to distinguish innocent from pathologic murmurs
 - Be able to hear normal splitting of second heart sound
 - Be able to recognize diastolic murmurs and distinguish them from systolic murmurs
 - Be able to recognize continuous murmurs
 - Gain experience reading 12 lead ECG's of patients being seen in clinic.
2. Recognize symptoms that may suggest congenital or acquired heart disease such as poor exercise tolerance, abnormal respiratory pattern, poor feeding, and abnormal color (cyanosis). *Competencies: MK, PC*
3. Recognize congestive heart failure in children of different ages. Be able to identify congestive heart failure in an infant. *Competencies: MK, PC*
4. Gain experience taking a history, ordering and interpreting tests, and planning management for common outpatient/ED referrals to cardiology clinic: *Competencies: MK, PC, SBP, P*
 - *New murmur in previously healthy child*
 - *Chest pain*
 - *Syncope*
 - *Mitral valve prolapse*
5. Learn outpatient management of common forms of congenital heart diseases including

Accreditation Council for Graduate Medical Education (ACGME) Core Competency Key:

PC = Patient Care; MK = Medical Knowledge; PBLI = Practice-Based Learning and Improvement; IC = Interpersonal and Communication Skills; P = Professionalism; SBP = Systems-Based Practice

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indications for surgery and pre- and post-operative management. In particular,

- **Left to right shunts:**
 - **Septal defects: VSD, ASD**
 - **Patent ductus arteriosus**

 - **Obstruction to outflow:**
 - **Right side:**
 - **Pulmonary stenosis**
 - **Tetralogy of Fallot**
 - **Left side:**
 - **Aortic stenosis**
 - **Coarctation of the aorta**

 - **Others:** Transposition of the great arteries **Competencies: MK, PC**
6. Develop basic knowledge of three stages of single ventricle palliative surgery for Hypoplastic Left Heart Syndrome and other forms of single ventricle. **Competencies: MK, PC**
 7. Learn basic echo views and information that can be obtained by echocardiography. **Competencies: MK, PC**
 8. Learn diagnosis and management of common pediatric arrhythmias by attending Arrhythmia Clinic. (Tuesday afternoons) **Competencies: MK, PC**
 9. Learn diagnostic evaluation and management of children with elevated lipid levels and/or obesity by attending Prevention Clinic. (Friday mornings) **Competencies: MK, PC**
 10. Learn the approach and diagnostic evaluation of young athletes with chest pain, syncope and or real or suspected arrhythmias, including return to play/restrictions on activity. **Competencies: MK, PC**
 11. Gain experience evaluating the impact of cardiovascular disease on other pediatric diseases by seeing patients on the Pediatric Cardiology consult service. **Competencies: MK, PC, SBP, PBLI**
 12. Learn diagnostic criteria, cardiovascular implications and management of patient with newly diagnosed inflammatory conditions of the heart such as myocarditis/pericarditis, and Kawasaki Disease. **Competencies: MK, PC**
 13. Demonstrate an awareness of and participate in patient safety efforts and identification/reporting of system errors. **Competencies: SBP, PC, PBLI, P**

DESCRIPTION OF CLINICAL EXPERIENCE:

PEDIATRIC CARDIOLOGY OUTPATIENT CLINIC SCHEDULE:

Monday AM: & PM:

Tuesday AM / PM: Arrhythmia clinic

Thursday AM: / PM:

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Friday AM: Prevention (Goldberg), Rocchini / PM: Kulik, Russell
 *Fellows may combine this rotation with experience in the rotation/rounding in the Pediatric Post Cardiothoracic Intensive Care Unit (with PD and Service approval).
 Fellows are supervised in compliance with UMHS/GME/Fellowship Program Supervision policies while on this rotation. Fellows are required to be in compliance with UMHS/GME/Fellowship Program Duty Hour Reporting policies while on this rotation.

DESCRIPTION OF DIDACTIC EXPERIENCE:

The fellows will be expected to participate in the department of cardiology’s weekly didactic sessions, which include echocardiography conferences and cardiology conferences.

EVALUATION PROCESS:

Fellows are evaluated using tools based on the six core competencies completed in writing by pediatric cardiology faculty after every rotation in the PED at UMHS via the UMHS MedHub online evaluation system. Fellows likewise evaluate their experiences after each rotation as well. Evaluations are forwarded to the Program Director and made available in aggregate to individual fellows via the MedHub system at all times. Formal review of fellow’s evaluations occurs at quarterly PD/Fellow meetings.

FEEDBACK MECHANISMS:

Specific problems or notations of excellence identified through verbal or written communication to the Program Director regarding the fellow are immediately brought to the attention of the involved fellow. Fellows receiving an overall poor performance grade (less than satisfactory evaluation for rotation) are notified immediately and meet with the PD. Fellows who receive notation for improvement in some areas (but pass the overall rotation) are given a work plan for educational intervention with specific timeline for completion and reevaluation. Fellows who do not pass this overall rotation will meet with the PD for remediation work plan, including timetable for reevaluation and UMHS notifications as required by GME. Monthly evaluations are placed in the fellow’s file and are available for review at any time by the fellow, but are also reviewed during quarterly meetings with the PD. Fellows are encouraged to review MedHUB evaluations at least monthly.

Reviewed		11/2006		06/30/2009	4/2011		
Revised	06/2005		11/2008		4/2011	07/05/2011	
Initial(s)	MN	MN	MN	MN	MN	sb	