

**NAME OF ROTATION:** Pediatric Cardiology

**COURSE DIRECTOR:** Henaro Sabino M.D.  
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**PRECEPTORS:** Sibley Heart Center Cardiologists

**LOCATION:** Sibley Heart Center  
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202 Village Center Pkwy  
Stockbridge, GA. 30281  
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**TRAINING LEVEL:** PL-2

**LENGTH OF ROTATION:** 1 month

**COURSE DISCRIPTION:**

The Pediatric Cardiology experience will allow the resident to develop the necessary clinical skills to diagnose and manage common congenital and acquired heart diseases in a primary care setting. The rotation includes supervised inpatient consultations, attending outpatient cardiology clinics, participating in all didactic lectures and conferences as well as reviewing ECGs, chest x-rays, and other diagnostic modalities.

**GOALS, OBJECTIVES AND CORE COMPETENCIES:**

**GOAL 1:** Understand how to distinguish normal from abnormal cardiovascular signs and symptoms.

**Objective 1.1:** The resident will enhance history taking and physical exam skills, including inspection, palpation, auscultation, and appropriate blood pressure measurement. Emphasis will be placed in the ability to differentiate innocent findings from pathologic ones.

**Objective 1.2:** The resident will improve their understanding of age appropriate variations in heart rate and blood pressure and identify normal ranges from birth to adolescence.

**Objective 1.3:** The resident will improve their understanding of special diagnostic tools, such as cardiac echocardiograms, Holtor monitors, and exercise testing including the structures and physiologic processes which can be identified and or measured using these diagnostic tools.

**Objective 1.4:** The resident will enhance their understanding of the anatomy and physiology of common cardiac diseases as well as their possible surgical corrections.

**Objective 1.5:** The resident will be able to describe the mechanisms of production of heart sounds and murmurs, with application to the differentiation between organic and innocent murmurs.

**Objective 1.6:** The resident will be able to differentiate between physiologic and pathologic variations in cardiac rhythm.

**Objective 1.7:** The resident will be able to describe normal perinatal circulation, changes at birth, and their influence on the development of signs and symptoms of congenital heart disease in the neonate.

**GOAL 2:** Understand how to diagnose and manage common cardiovascular conditions that generally do not require referral to cardiologist.

**Objective 2.1:** The resident will be able to identify and describe the pathophysiology of and manage common conditions including:

1. Peripheral pulmonic stenosis
2. Tachycardia related to fever
3. Functional heart murmur
4. Small VSD
5. Small PDA
6. Chest pain
7. Mild hypertension

**GOAL 3:** Enable residents to manage and/or refer cardiac problems in a primary care setting.

**Objective 3.1:** The resident will develop the ability to differentiate between innocent and pathologic heart murmurs and understand when to refer.

**Objective 3.2:** The resident will be able to describe the differential diagnosis, initial evaluation, management and appropriate referral for a child presenting with signs and symptoms suggestive of:

1. Cyanosis
2. Severe hypertension
3. Supraventricular tachycardia
4. Bradycardia
5. Congestive heart failure
6. Cardiovascular collapse
7. Syncope
8. Chest pain suggestive of myocardial ischemia

**Objective 3.3:** The resident will be able to describe the physical findings, pathophysiology, treatment, and prognosis for commonly referred conditions including:

1. VSD
2. ASD
3. Tetralogy of Fallot
4. PDA
5. Coarctation of the Aorta
6. Transposition of great vessels
7. Aortic stenosis
8. Pulmonic stenosis
9. Mitral valve prolapse
10. Total anomalous pulmonary venous return
11. Supraventricular tachycardia
12. Myocarditis
13. Endocarditis
14. Cardiomyopathy
15. Kawasaki's disease
16. Acute rheumatic fever
17. Bacterial endocarditis
18. Essential hypertension

**GOAL 4:** Understand the general pediatrician's role in the diagnosis and management of hypertension in children and when it is appropriate to refer to a specialist.

**Objective 4.1:** The resident will be able to describe the differential diagnosis and appropriate work up for the patient with hypertension depending on the severity.

**Objective 4.2:** The resident will be able to list a step wise approach to the treatment of hypertension including the role of diet, exercise, and antihypertension medications.

**GOAL 5:** Understand key principles related to the use of cardiovascular drugs.

**Objective 5.1:** The resident will be able to describe the commonly used antihypertensive drugs including the physiological effect, indications, contraindications, and side effects.

**GOAL 6:** Understand the pediatrician's role in the prevention of cardiovascular disease.

**Objective 6.1:** The resident will be able to recognize the risk factors and identify appropriate screening and prevention strategies for atherosclerotic heart disease and hypertension.

**Objective 6.2:** The resident will be able to define the indications for prophylaxis of subacute bacterial endocarditis and describe the appropriate antibiotic treatment for prophylaxis.

**Objective 6.3:** The resident will demonstrate knowledge of appropriate antibiotic treatment for prophylaxis of rheumatic fever.

**Objective 6.4:** The resident will be able to recognize cardiac conditions which mandate influenza immunization, chemoprophylaxis, and antiviral treatment for respiratory viruses.

**Objective 6.5:** The resident will be able to recognize the role of exercise and sports activities for the child with and without cardiac disease.

**Objective 6.6:** Enable residents to understand and practice preventive cardiology.

**Objective 6.7:** Enhance the resident's ability to screen and manage the student athlete that is at risk for sudden death.

**Objective 6.8:** The resident will develop an understanding and management of childhood hyperlipidemia and obesity.

**COMPETENCIES:**

**Competency 1: Patient Care.** Provide family-centered patient care that is developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

1.1: Gather essential and accurate information using the following clinical skills: medical interviewing, physical examination, diagnostic studies and developmental assessments.

1.2: Make informed diagnostic and therapeutic decisions based on patient information, current scientific evidence and clinical judgment, using clinical problem-solving skills, recognizing the limits of one's knowledge and expertise, gathering appropriate information and using colleagues and consultants appropriately.

1.3: Develop and carry out patient care plans, using principles of evidence-based decision-making and appropriate prioritization, and taking into account the needs, beliefs and resources of patient and family.

1.4: Effectively use common therapies within the scope of general pediatric practice, including a variety of prescription and non-prescription medications, intravenous fluids, and inhalation treatments, as well as special diets and nutritional supplements. Be familiar with therapies commonly used by subspecialists and other professionals who care for children.

1.5: Prescribe and perform competently all medical procedures considered essential for the scope of general pediatric practice; be familiar with those procedures commonly used by subspecialists and other professionals who care for children.

1.6: Counsel patients and families in a supportive manner so they can understand their illness or injury and its treatment, share in decision-making, make informed consent and participate actively in the care plan.

1.7: Provide effective preventive health care and anticipatory guidance to patients and families.

**Competency 2: Medical Knowledge.** Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

2.1: Demonstrate that you know or can efficiently access the knowledge base needed for effective patient care.

2.2: Critically evaluate current medical information and scientific evidence and modify your knowledge base accordingly.

2.3: Recognize the limits of one's knowledge and expertise by seeking information needed to answer clinical questions and using consultants and referrals appropriately. Use this process to guide life-long learning plans.

2.4: Apply current medical information and scientific evidence effectively to patient care (e.g., use an open-minded, analytical approach, sound clinical judgment, and appropriate attention to priorities).

**Competency 3: Communication Skills.** Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

3.1: Communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a therapeutic relationship across the broad range of socioeconomic and cultural backgrounds.

3.2: Communicate effectively with physicians, other health professionals, and health-related agencies to create and sustain information exchange and teamwork for patient care.

3.3: Develop effective approaches for teaching students, colleagues, other professionals and lay groups.

3.4: Work effectively as a member or leader of a health care team, and collaborate productively with professional organizations.

3.5: Serve as a consultant on pediatric matters to other physicians and health professionals.

3.6: Maintain comprehensive, timely and legible medical records.

**Competency 4: Practice-based Learning and Improvement.** Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

4.1: Use scientific methods and evidence to investigate, evaluate and improve one's own patient care practice; continually strive to integrate best evidence into one's daily practice of medicine.

4.2: Systematically assess the health care needs of one's practice population, and use this information to direct population-based problem-solving, with special attention to preventable morbidity and risk.

4.3: Demonstrate willingness and capability to be a life-long learner by pursuing answers to clinical questions, using journal articles, texts, information resources, patients, colleagues and formal teaching conferences.

4.4: Be prepared to alter one's practice of medicine over time in response to new discoveries and advances in epidemiology and clinical care.

4.5: Seek and incorporate feedback and self-assessment into a plan for professional growth and practice improvement (e.g., use evaluations provided by patients, peers, superiors and subordinates to improve patient care).

**Competency 5: Professionalism.** Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

5.1: Demonstrate commitment, responsibility, and accountability for patient care, including continuity of care.

5.2: Be honest and use integrity in your professional duties.

5.3: Consistently use compassion and empathy in one's role as a physician.

5.4: Maintain professional boundaries in one's dealings with patients, family, staff, and professional colleagues.

5.5: Place the needs of patients and society over your own self-interest.

5.6: Demonstrate sensitivity and responsiveness to patients' and colleagues' gender, age, culture, disabilities, ethnicity, and sexual orientation.

5.7: Meet high standards of legal and ethical behavior.

5.8: Develop a healthy lifestyle, fostering behaviors that help balance personal goals and professional responsibilities. Recognize and respond to personal stress and fatigue that might interfere with professional duties.

**Competency 6: Systems-Based Practice.** Understand how to practice quality health care and advocate for patients within the context of the health care system.

6.1: Know how types of medical practice and delivery systems differ from one another with respect to how they control health care costs, allocate resources, and assure quality.

6.2: Practice cost-effective health care and resource allocation that does not compromise quality of care.

6.3: Advocate for patients in one's practice by helping them with system complexities and identifying resources to meet their needs.

6.4: Work with health care managers and providers to assess, coordinate, and improve patient care, consistently advocating for high quality.

6.5: Advocate for the promotion of health and the prevention of disease and injury in populations.

6.6: Acknowledge medical errors and develop practice systems to prevent them.

**SCHEDULE:**

\*Residents will be expected to attend their regularly scheduled continuity clinic.

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
0700					Cardio lecture, @Egleston Rm 8/9, Cardio fellows
0830- 1630	Clinic/ Teaching	Clinic/ Teaching	Clinic/ Teaching	Clinic/ Teaching	Clinic/ Teaching
Office	Cumming	Alpharetta	Alpharetta	Alpharetta	Stockbridge
Preceptor	Sabino	Sabino/Frias	Sabino	Sabino	McConnell

**DIDACTIC SESSIONS:**

Residents will attend weekly didactic lectures at the residency suite. In addition, the following topics will be covered with the preceptors:

- Innocent heart murmurs
- Pathologic heart murmurs
- Cyanotic and acyanotic heart lesions
- Hyperlipidemia
- Obesity
- Hypertension
- Arrhythmias
- Chest pain
- Syncope
- Acquired heart disease
- Sudden death
- Coronary artery disease
- Myocarditis
- Heart failure
- Congenital heart disease
- Cardiac medications for CHF, arrhythmia, hypertension

**EVALUATIONS:**

The preceptors and resident will complete evaluation forms. Evaluation forms are completed by supervisors. Residents will be evaluated on the following the six core competencies.

**REFERENCES:**

- Johnson WH, Moller JH: Pediatric Cardiology (Handbook) (provided by Dr. Sabino)
- Selected articles