



## CARDIOLOGY Curriculum

NGMC- Family Medicine Residency Program  
Gainesville, Ga

PGY: 3

### Description of Rotation:

Cardiovascular disease is a major cause of morbidity and mortality in our community; therefore, it is of utmost importance that Family physicians learn how to diagnose and treat common cardiovascular conditions. Along with medication management, it is imperative that the family physicians learn the behavioral and lifestyle factors that affect cardiovascular health. This is a four-week cardiology experience with the attending cardiologist at NGMC Medical Center (NGMC). Residents will round daily with the cardiologist at NGMC, conduct cardiology consultations in inpatient wards, and attend patients with the cardiology attending at their office. The resident/learner will become competent and/or familiar with the appropriate evaluation and/or management of patients with cardiac disease processes and diagnostic studies.

### Overall Goals of Cardiology Rotation:

At the completion of the residency training, a family medicine resident should

- Understand basic and clinical knowledge of cardiac anatomy, and pathophysiology of common cardiovascular conditions (Medical Knowledge-1)
- Perform an appropriate cardiac history and physical examination, document finding, develop an appropriate differential diagnosis, and plan for further evaluation and management (Patient care, Medical Knowledge, Interpersonal and Communication Skills) (PC-1, MK-1, C-1)
- Use evidence-based knowledge regarding primary and secondary prevention of cardiac disease (Medical Knowledge, Patient care) (MK-1, PC-1)
- Understand the influence of race, gender, and cultural differences on cardiovascular health (PC-1, C-1, PBLI-1)
- Locate and appraise evidence from reliable sources and appropriately apply it to current practice and develop plan to improve care. (Patient Care, Medical Knowledge, Practice based Learning and Improvement, Professionalism)
- Work with physicians, nurses, pharmacists, nutritionists, and other health care professionals who care for patient to provide team-based care (PC-1, SBP-1, Prof-1)
- Perform cardiac resuscitation and procedures necessary to stabilize a patient experiencing a cardiac emergency (MK-1, PC-1)

### Patient Care Objectives and Competencies

- PC-1: Cares for Acutely ill or injured patients in urgent and emergent situations in all settings.
- PC-2: Cares for patients with chronic conditions.
- PC-3: Partners with the patient, family, and community to improve health through disease prevention and health promotion.
- PC-4: Partners with the patient to address issues of ongoing signs, symptoms, or health concerns that remain over time without clear diagnosis despite evaluation and treatment, in a patient-centered, cost-effective manner.

### Objectives:

- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- Gather essential and accurate information in a concise yet comprehensive manner that includes psychosocial influences



### **Medical Knowledge Objectives and Competencies**

- MK-1: Demonstrate medical knowledge of sufficient breadth and depth to practice family medicine.
- MK-2: Applies critical thinking skills in patient care.

#### **Objectives:**

- **Medical Knowledge**
  - Understand basic and clinical knowledge of cardiac anatomy, and pathophysiology of common cardiovascular conditions (MK-1)
  - The ability to complete history and perform a complete physical examination
  - Learn how to approach common cardiovascular conditions
  - Review current practices and obtain information from collateral sources when appropriate
  - Synthesize an appropriate diagnosis and treatment plan for common cardiovascular conditions
- In the appropriate setting the resident should demonstrate the ability to apply knowledge of:
  - Normal cardiovascular anatomy and physiology
  - Changes in cardiovascular physiology with age and pregnancy
  - Risk Factors
    - Coronary artery disease (Hyperlipidemia, smoking, genetic predisposition, Sedentary life style, hypertension, Diabetes, Obesity)
    - Valvular disease
  - Cardiovascular History
  - Cardiovascular physical examination
  - Non-invasive diagnostic studies
    - Electrocardiography
    - Chest radiography
    - Stress testing (exercise and pharmacologic techniques)
    - Echocardiography/Doppler imaging, both rest and stress, using exercise or pharmacologic techniques
    - Radioisotope Imaging, both rest and stress, using exercise or pharmacologic techniques
    - ECG monitoring (In-hospital/ Ambulatory)
    - Vascular Doppler and Ultrasound examinations
    - Computed tomography and calcium scoring
    - Magnetic resonance Imaging (MRI) and magnetic resonance angiography (MRA)
- Invasive Diagnostic studies and Interventions
  - Cardiac catheterization and angiography
  - Carotid and peripheral vascular angiography
  - Intracoronary and peripheral vascular intervention using appropriate devices
  - Internal monitoring devices
    - Central Venous and peripheral arterial catheter
  - Electro physiologic studies
  - Indications and Contraindications for therapeutic interventions
    - Coronary artery bypass
    - Angioplasty techniques and stent placement
    - Pacemaker insertion
    - Implantable Defibrillator



- Valve replacement/Repair, percutaneous balloon valvotomy
- Electrophysiological ablation
- Relevant laboratory Interpretation, including serum Enzymes, isoenzymes, lipids and B-type natriuretic peptide (BNP) or Pro-BNP
- Specific disease and conditions such as
  - Stable Angina
  - Acute Coronary Syndrome
    - Unstable Angina
    - ST elevation MI, NON-ST elevation MI with and without complications (cardiogenic shock, dysrhythmias, papillary muscle dysfunction and rupture, ventricular rupture, aneurysm)
    - Sudden death
  - Syncope, cardiogenic and noncardiogenic
  - Dysrhythmias
    - Tachyarrhythmia (Supraventricular, Ventricular, reentrant)
    - Bradyarrhythmia's
    - Ectopy (Atrial, ventricular)
  - Hypertension (essential, secondary, Pulmonary)
  - Pulmonary Heart disease/ Cor Pulmonale
  - Heart failure (systolic/ diastolic dysfunction)
  - Venous Thromboembolic disease
  - Valvular disease
    - Rheumatic
    - Congenital
    - Degenerative
    - Mitral valve Prolapse syndrome
  - Congenital heart disease
    - Common right to left shunts (cyanotic)
    - Common left to right shunts (acyanotic)
    - Common obstructive Problems
  - Dissecting aneurysm
  - Innocent heart murmurs
  - Peripheral vascular disease
    - Aneurysm
    - Carotid Artherosclerosis
    - Arterial Disease
    - Arteriosclerosis obliterans
  - Cardiomyopathies
    - Congestive
    - Restricted
    - Hypertrophic cardiomyopathy
    - Postpartum
  - Pericardial disease
  - Infection –related
    - Viral Myocarditis
    - Sub-acute bacterial endocarditis
    - Kawasaki disease
  - Other cardiac disorders
    - Immunologic (Acute rheumatic fever, Autoimmune disorders)



- Psychogenic
- Traumatic
- Nutritional
- Myxoma
- Thyroid dysfunction
- Marfan Syndrome
- Drug related (cocaine, corticosteroids, chemotherapeutic drugs)
- Evaluation of cardiac patients for non-cardiac surgery
  - Cardiac risk, including preoperative assessment tools
  - Preoperative and postoperative management
- Antibiotic prophylaxis for Valvular disease
- Cardiovascular pharmacology
- In the appropriate setting, the resident should demonstrate the ability to perform or appropriately refer the following skills
  - Diagnostic procedures
    - Obtaining history and performing physical examination
    - Perform and Interpret ECG
    - Interpretation of Chest radiographs
    - Exercise stress test monitoring and Interpretation
    - Ambulatory ECG monitoring and interpretation
  - Therapeutic Procedures
    - Risk management
    - Cardiopulmonary resuscitation (CPR)
    - Treatment of dysrhythmias and conduction disturbances
    - Use of external temporary pacemakers
    - Management of acute myocardial infarction, post infarction care, and complications
    - Congestive heart failure
    - Hypertensive Urgencies and Emergencies
    - Supervision and Management of cardiovascular rehabilitation
    - Management of patients after an intervention
      - Lifestyle adjustments
      - Coronary artery bypass surgery
      - Valve surgery
      - Congenital heart disease surgery
      - Catheter related interventional procedures
    - Incorporation of bio psychosocial issues in overall management
      - Sexual function
      - Depression
      - Family Dynamics



### **Interpersonal and Communication Skills Objectives and Competencies**

<b>MK Topic</b>	<b>On-Line Resource</b>
Atrial Fibrillation	<a href="http://www.aafp.org/afp/2002/0715/p249.html">http://www.aafp.org/afp/2002/0715/p249.html</a>
Hyperlipidemia	<a href="http://www.aafp.org/afp/1998/0501/p2192.html">http://www.aafp.org/afp/1998/0501/p2192.html</a>
Congestive Heart Failure	<a href="http://circ.ahajournals.org/content/circulationaha/119/14/1977.full.pdf">http://circ.ahajournals.org/content/circulationaha/119/14/1977.full.pdf</a>
Palpitations/Arrhythmias	<a href="http://www.aafp.org/afp/2005/0215/p743.html">http://www.aafp.org/afp/2005/0215/p743.html</a>
Hypertrophic Obstructive Cardiomyopathy	<a href="http://emedicine.medscape.com/article/890068-overview">http://emedicine.medscape.com/article/890068-overview</a>
EKG Interpretations	<a href="http://www.ecglibrary.com/ecghome.php">http://www.ecglibrary.com/ecghome.php</a>
Valvular Heart Disease	<a href="http://www.aafp.org/afp/2001/0601/p2201.html">http://www.aafp.org/afp/2001/0601/p2201.html</a>
Acute Coronary Syndrome	<a href="http://www.aafp.org/afp/2005/0701/p119.html">http://www.aafp.org/afp/2005/0701/p119.html</a>

- C-1: Develop meaningful, therapeutic relationships with patients and families.
- C-2: Communicates effectively with patients, families, and the public.
- C-3: Develops relationships and effectively communicates with physicians, other health professionals, and health care teams.
- C-4: Utilizes technology to optimize communication

#### **Objectives:**

- Demonstrate respect, compassion and integrity in all doctor-patient encounters and communication
- Demonstrate professional and competent verbal communication with patient and patient family
- Demonstrate profession and competent verbal communication with attending physician, nurses, office staff and other allied health professionals who are part of the patient's care team
- Discussing ethical issues including end of life care (C-1)

#### **Practice Based Learning and Improvement Objectives and Competencies:**

- PBLI-1: Locates, appraises, and simulates evidence from scientific studies related to the patients' health problems
- PBLI-2: Demonstrates self-directed learning
- PGLI-3: Improves systems in which the physician provides care

#### **Objectives:**

- Apply and Document use of evidence-based recommendations for treatment of common cardiovascular conditions
- Identify personal knowledge deficits and pursue reliable resources for education
- Utilize nationally accepted recommendations for the treatment of cardiovascular conditions; (i.e. outpatient management of hypertension (JNC 8), outpatient management of hyperlipidemia (ATP IV), management of congestive heart failure, etc.)
- Demonstrate knowledge of and participate in practice review (PBLI-1a)
- Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems (PBLI-2)
- Facilitate the learning of students and other health care professionals (PBLI-6)

#### **Professionalism Objectives and Competencies:**



- PROF-1: Completes a process of professionalization
- PROF-2: Demonstrates professional conduct and accountability
- PROF-3: Improves systems in which the physician provides care

**Objectives:**

- Meet dress code expectations, arrive on time to the correct work location
- Demonstrate respect, compassion, and integrity. Commit to excellence and ongoing professional development. Demonstrate responsiveness to the needs of patient and society that supersedes self-interest.
- Adhere to high level of professional conduct and assume responsibility in the care of assigned patients
- Demonstrate cultural competency in patient care and staff interactions.

**Systems Based Practice Objectives and Competencies**

- SBP-1: Provides cost-conscious medical care
- SBP-2: Emphasizes patient safety
- SBP-3: Advocates for individual and community health
- SBP-4: Coordinates team-based care

**Objectives:** (Based on Milestones for the appropriate PGY!)

- Demonstrate ability to work with attending physician, consultants and allied health professionals in a manner that foster team-based care.
- Communicate concerns about patient safety and assist in the development of practice improvement when applicable
- Advocate for appropriate follow up with primary and with specialist as appropriate for patient care
- Understand the risks, benefits, cost, and resource utilizations associated with various cardiovascular treatment options, including non-invasive vs. invasive cardiac testing.
- Understand the risks/benefits of various cardiovascular treatment options including non-invasive vs. invasive cardiac testing, and the treatment and the costs/resource utilization associated with each (SBP-3)
- Advocate for quality patient care and assist patients in dealing with system complexities (SBP-4)
- Know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance (SBP-5)