**Description of Rotation or Educational Experience**

Cardiovascular disease is the leading cause of death in the United States, and is a major cause of morbidity and diminished quality of life. Family Medicine physicians can make a major impact on this disease through primary prevention and must be prepared to identify those at risk so that early intervention can be instituted. The family physician must also be able to manage those patients with established cardiovascular disease to diminish morbidity and improve their quality of life. In some circumstances, the family physician may find it appropriate to seek consultation from a cardiologist to either manage or co-manage a patient for optimal care.

This one-month rotation entails an inpatient experience during the PGY-1 year at St. Ann’s. Supervision is by board-certified cardiologists. This rotation is intended to give residents exposure to patients with cardiac conditions in an inpatient setting under direct supervision of cardiologists. It also involves care of the critically ill cardiac patient in the Coronary Care unit.

At the conclusion of this rotation, the PGY-1 resident will be able to demonstrate the following competencies.
**Patient Care**

**Goal**

The Family Medicine resident must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. The resident is expected to:

**Competencies**

1. **Gather essential and accurate information about patients**
2. **Recognize symptoms of cardiac disease**
3. **Make informed decisions about diagnostic and therapeutic interventions**
4. **Develop and carry out appropriate patient management plans**
5. **Perform all medical procedures considered essential to the specialty of Family Medicine.**
6. **Perform a preoperative cardiac assessment**
7. **Provide preventive health care consistent with the philosophy of health maintenance and disease prevention**
8. **Understand appropriate referral to/consultation with cardiologists**

**Objectives**

At the end of the is rotation, the resident will be able to:

- Assess the cardiac risk of a patient scheduled for non-cardiac surgery and provide preoperative and postoperative management of patients with cardiac disease.
- Perform an appropriate cardiac history and physical exam
- Document the findings, impression, and plan of care for each patient
- Accurately and concisely present the patient to attending physicians and consultants
- Identify and provide adequate intervention for the psychosocial problems that patients with cardiovascular may develop (including but not limited to):
  - Explain and discuss the relationship and negative impact that depression, anxiety, and/or stress have on cardiovascular disease
  - Discuss and recommend to the patients the prevention and therapeutic approach to the “cardiac cripple.”
  - Evaluate and identify the potential for and treatment of sexual dysfunction in cardiac disease
- Perform noninvasive and invasive diagnostic and therapeutic procedures essential to cardiology.
- Demonstrate skill in adult cardiac and pulmonary resuscitation procedures
- Be able to stabilize and transport the resuscitated patient to the CCU/ICU, including:
  - Perform basic life support (CPR)
  - Perform endotracheal intubation and management of cardioversion and/or cardiac defibrillation
• Perform (as applicable) the following procedural skills:
  o peripheral venous (IV) insertion
  o subclavian vein catheterization (line)
  o femoral vein catheterization (line)
  o internal jugular catheterization (line)
  o arterial puncture for blood gas analysis, and accurate interpretation
  o peripheral arterial catheterization (line)
  o ECG lead placement and accurate interpretation
  o accurately interpret radiographs of the chest
• Exhibit familiarity with the following procedural skills:
  o thoracentesis
  o Swan-Ganz catheter placement
  o pericardiocentesis
  o transvenous pacer placement
  o exercise treadmill stress testing
• Interpret the data obtained from following monitoring devices in the critical care setting:
  o Swan-Ganz catheter
  o arterial line
  o central venous pressure (CVP) line
  o pulse oximeter

Medical Knowledge

Goal
Residents are expected to develop the necessary knowledge, skills and attitudes to recognize, manage, and appropriately refer when necessary common cardiovascular diseases encountered in Family Medicine.

Competency

• Understand the variety of management strategies for cardiac disease.
• Understand the cardiac effects of pulmonary disease.
• Understand cardiac manifestation of systematic disease.
• Understand the indication for open-heart surgery.
• Understand the role of somatic dysfunction in cardiac disease.

Objectives

At the conclusion of the rotation, PGY-1 residents will be able to:

• Describe and discuss normal cardiovascular anatomy and physiology, and how these change with age and with pregnancy.
• Describe and analyze the pharmacology of and indications for commonly prescribed cardiovascular medications.
• Outline a logical, diagnostic approach to common problems suggestive of cardiovascular disease encountered in Family Medicine, including:
  - chest pain
  - syncope
  - heart murmur
  - dyspnea
  - cardiac rhythm abnormality
  - peripheral edema

• Understand and explain the pathophysiology, presentation, initial evaluation, early stabilization, management and appropriate disposition of patients who have the following conditions:
  - coronary artery disease
  - stable angina
  - unstable angina
  - myocardial infarction
  - silent ischemia
  - sudden death
  - cardiac dysrhythmias and conduction abnormalities
    - atrial flutter
    - atrial fibrillation (including indications for anticoagulation)
    - supraventricular tachyarrhythmia
    - premature ventricular contraction
    - ventricular tachycardia
    - ventricular fibrillation
    - 1st, 2nd, and 3rd degree heart block
    - bradycardia, including junctional rhythms
  - congestive heart failure
    - diastolic dysfunction
    - systolic dysfunction
  - cardiomyopathy
    - dilated
    - restrictive
    - hypertrophic
    - postpartum
  - blood pressure abnormalities
    - chronic hypertension
    - hypertensive urgency
    - hypertensive emergency
    - hypotension
    - cardiogenic shock
  - valvular heart disease, including indications for and types of SBE prophylaxis
  - pulmonary hypertension
  - pericardial disease
    - acute pericarditis
    - pericardial effusion
    - pericardial constriction
• List the indications and diagnostic and/or therapeutic roles for each of the following procedures:
  o cardiac enzymes in the diagnosis of acute myocardial injury
  o echocardiogram (surface vs. transesophageal)
  o stress testing (identify various methods)
  o ambulatory ECG monitoring (Holter monitoring – 24 hr vs. event)
  o radioisotope imaging
  o carotid and peripheral vascular angiography
  o ultrafast CT (heart) scan
  o cardiac catheterization
  o thrombolytic therapy
  o coronary artery bypass graft
  o coronary artery angioplasty
  o coronary artery stent placement
  o electrophysiologic stimulation (EPS) study
  o electrophysiologic ablation
  o pacemaker insertion (identify various types)
  o valve replacement or repair
  o ICD insertion

• Identify and list the major known modifiable risk factors for cardiovascular disease.

Practice- Based Learning and Improvement

Goal

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning. Residents are expected to develop skills and habits to be able to:
<table>
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<th>Competencies</th>
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| • Identify and perform appropriate cardiac care activities  
• Incorporate formative evaluation feedback into daily practice.  
• Locate, appraise and assimilate evidence from cardiac care literature and journal clubs related to patients’ health situation and daily practice.  
• Use information technology to optimize learning.                                                                                                                                                                                                                                             |
| **Objectives**                                                                                                                                                                                                                                                                                                                                               |
| At the conclusion of this rotation the residents will be able to:  
• Utilize evidence-based medicine to determine appropriate strategies for cardiac care  
• Understand the importance of patient education in treatment of cardiac disorders and demonstrate the ability to facilitate the learning of others.  
• Analyze ones own practice for needed improvement                                                                                                                                                                                                                                             |
| **Systems Based Practice**                                                                                                                                                                                                                                                                                                                                  |
| **Goal**                                                                                                                                                                                                                                                                                                                                                      |
| Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:                                                                                                                                                     |
| **Competencies**                                                                                                                                                                                                                                                                                                                                              |
| • Work effectively in various health care delivery settings and systems relevant to cardiac care  
• Coordinate patient care within the health care system as relevant to cardiac care  
• Work in interprofessional teams to enhance patient safety and improve patient care quality                                                                                                                                                                                                       |
| **Objectives**                                                                                                                                                                                                                                                                                                                                               |
| By the conclusion of this rotation, the residents will be able to:  
• Demonstrate understanding of the interaction of cardiac care within the health care system.  
• Partner with health care managers to assess, coordinate and improve health care.  
• Demonstrate an understanding of community systems and agencies that enter cardiac care  
• Identify the role of the cardiologist as a consultant and appropriate time for consultation.                                                                                                                                                                                      |
| **Professionalism**                                                                                                                                                                                                                                                                                                                                          |
| **Goal**                                                                                                                                                                                                                                                                                                                                                      |
| Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:                                                                                                                                                                               |
Competencies

- Compassion, integrity, and respect for others
- Respect for patient privacy and autonomy
- Accountability to patients, society, and the profession
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Objectives

During this rotation the residents will demonstrate:

- Respect, compassion and integrity
- Sensitivity to patients’ cultural diversity.

By the end of the rotation, the residents will be able to:

- Understand the importance of recognizing cultural diversity among the patient population
- Demonstrate ethical principles in providing or withholding care, confidentiality of patient information, and informed consent.

Interpersonal and Communication Skills

Goal

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Competencies

- Communicate effectively with patients’ families across a broad range of socioeconomic and cultural backgrounds
- Communicate effectively with physicians, other health professionals, and health related agencies
- Work effectively as a member of a health care team or other professional group.
- Maintain comprehensive, timely, and legible medical records using the electronic medical record.
- Communicate effectively with patients’ families and other medical professionals regarding cardiovascular care issues.

Objectives

By the conclusion of this rotation, the PGY-1 residents will be able to:
• Demonstrate the proper counseling techniques for cardiovascular risk factors, including:
  o Cigarette (tobacco) use
  o Sedentary lifestyle
  o Hyperlipidemia
  o Hypertension
  o Diabetes mellitus
• Describe to patients and families the indications for and types of cardiac rehabilitation available for patients with established cardiovascular disease.
• Work effectively with others as a member of the cardiac care team.
• Create and sustain a therapeutic and ethically sound relationship with patients and families.
• Accurately and concisely present findings to the attending physicians and consultants
• Work as part of a team with other physicians, nursing and ancillary staff to provide comprehensive care to the cardiovascular patients.
• Document patient treatment in the EMR in a timely appropriate manner.

**Teaching Methods**

These goals and objectives will be taught using direct clinical experience, individual reading, and teaching conferences. The PGY-1 residents will be supervised by a Board certified cardiologist. The Family Medicine residents will round on patients in the hospital and cardiac ICU. They will also see patients in the outpatient cardiology clinic. The residents will attend the Family Medicine didactic sessions and their own outpatient clinics.

An elective is available in outpatient cardiology for those who desire further training. Certification in Advance Cardiac Life Support must be successfully completed during the 1st- and 3rd-year of residency training, not necessarily during the cardiology rotation.

**Assessment Method (Residents)**

1. At the end of the rotation, the cardiologist(s) on the service will provide an evaluation of the residents’ performance, using the evaluation form developed by the Family Medicine residency program. To successfully complete this rotation, the resident will demonstrate competence in all areas outlined in the curriculum. Cognitive competence must include not only familiarity with the factual aspects of Cardiology, but also the ability to integrate such factual knowledge into the daily practice of family medicine.

2. At the end of the rotation, the resident will perform a self-assessment, using the goals and objectives in the rotation description, to assess competency and to determine areas which still need further training and/or exposure.

3. The yearly Family Medicine in-training examination will also assess the cognitive aspects of cardiology.

4. The resident is required to complete the Hopkins Module on Smoking.
Assessment Method (Program Evaluation)

1. The resident will evaluate the faculty and the cardiology rotation upon its completion by using the evaluation form developed by the Family Medicine residency program.

2. Both residents and faculty will complete the annual standard program evaluation.

Level of Supervision

Supervision of residents is accomplished through both direct and indirect observation by the attending cardiologists.

Educational Resources

SELECTED READINGS

- Readings as assigned by cardiology faculty
- Bonow: Braunwald's Heart Disease - A Textbook of Cardiovascular Medicine, 9th ed., 2011
- AAFP Self-Study Home Assessment monograph on Cardiovascular Disease
- ACLS manual
- JNC-7 Guidelines for Hypertension
- Smoking (Hopkins Module)
- American Family Physician Topic Module: Coronary Artery Disease/Coronary Heart Disease

Screening and Diagnosis

- Using Nontraditional Risk Factors in Coronary Heart Disease Risk Assessment [Putting Prevention into Practice] (02/15/2011)
- Global Risk of Coronary Heart Disease: Assessment and Application (08/01/2010)
- AHA Guidelines on Cardiac CT for Assessing Coronary Artery Disease [Practice Guidelines] (03/01/2008)
- Cardiomyopathy: An Overview (05/01/2009)
- Diagnosis of Acute Coronary Syndrome (07/01/2005)
- Noninvasive Cardiac Imaging (04/15/2007)
- Update on Exercise Stress Testing (11/15/2006)

Prevention

- AHA Updates Guidelines on CVD Prevention in Women [Practice Guidelines] (01/01/2012)
<table>
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<tr>
<th>Services Task Force</th>
<th>(06/15/2011)</th>
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<tr>
<td>• <strong>Aspirin for the Prevention of Cardiovascular Disease</strong> [Putting Prevention into Practice] (06/15/2011)</td>
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<td>• <strong>Primary Prevention of CVD: Physical Activity</strong> [Clinical Evidence Handbook] (07/15/2010)</td>
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<tr>
<td>• <strong>Diets for Cardiovascular Disease Prevention: What Is the Evidence?</strong> (04/01/2009)</td>
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<td>• <strong>Preventing Cardiovascular Disease in Women</strong> (10/15/2006)</td>
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<tr>
<td>• <strong>Hormone Therapy for the Prevention of Chronic Conditions in Postmenopausal Women</strong> [Putting Prevention into Practice] (12/15/2005)</td>
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<tr>
<td>• <strong>Hormone Therapy for the Prevention of Chronic Conditions in Postmenopausal Women</strong> [U.S. Preventive Services Task Force] (07/15/2005)</td>
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<tr>
<td>• <strong>Should We Use Multiple Risk Factor Interventions for the Primary Prevention of Coronary Heart Disease?</strong> [Cochrane for Clinicians] (07/15/2002)</td>
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**Treatment**

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<tr>
<td>• <strong>Drug-Eluting Coronary Artery Stents</strong> (12/01/2009)</td>
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<td>• <strong>ACC/AHA Guideline Update for the Management of ST-Segment Elevation Myocardial Infarction</strong> (06/15/2009)</td>
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<td>• <strong>Acute Coronary Syndrome (Unstable Angina and non-ST Elevation Myocardial Infarction)</strong> [Clinical Evidence Handbook] (08/15/2009)</td>
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<td>• <strong>Unstable Angina and Non-ST-Segment Elevation Myocardial Infarction: Part I. Initial Evaluation and Management, and Hospital Care</strong> (08/01/2004)</td>
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<tr>
<td>• <strong>Unstable Angina and Non-ST-Segment Elevation Myocardial Infarction: Part II. Coronary Revascularization, Hospital Discharge, and Post-Hospital Care</strong> (08/01/2004)</td>
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<tr>
<td>• <strong>Heparins for Unstable Angina and Non-ST-Segment Elevation Myocardial Infarction</strong> [Cochrane for Clinicians] (04/01/2009)</td>
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<tr>
<td>• <strong>Early Invasive Therapy or Conservative Management for Unstable Angina or NSTEMI?</strong> [Cochrane for Clinicians] (01/01/2007)</td>
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<tr>
<td>• <strong>Aspirin Combined with Clopidogrel (Plavix) Decreases Cardiovascular Events in Patients with Acute Coronary Syndrome</strong> [Cochrane for Clinicians] (12/01/2007)</td>
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<tr>
<td>• <strong>Medical Management of Stable Coronary Artery Disease</strong> (04/01/2011)</td>
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<tr>
<td>• <strong>AHA Releases Guidelines for Hypertension Management in Adults with or at Risk of CAD</strong> [Practice Guidelines] (07/15/2008)</td>
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<tr>
<td>• <strong>Secondary Prevention of Coronary Artery Disease</strong> (02/01/2010)</td>
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<tr>
<td>• <strong>Exercise-Based Rehabilitation for Coronary Heart Disease</strong> [Cochrane for Clinicians] (08/01/2004)</td>
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<tr>
<td>• <strong>Cardiovascular Risk Reduction in Children</strong> [Practice Guidelines] (06/15/2007)</td>
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<tr>
<td>• <strong>Ranolazine (Ranexa) for Chronic Angina</strong> [STEPS] (02/15/2007)</td>
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<tr>
<td>• <strong>Nutritional Assessment and Counseling for Prevention and Treatment of Cardiovascular Disease</strong> (01/15/2006)</td>
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<tr>
<td>• <strong>Cardiac Rehabilitation</strong> (11/01/2009)</td>
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<tr>
<td>• <strong>Prognosis for Patients Undergoing Coronary Angioplasty</strong> [Point-of-Care Guides] (11/15/2004)</td>
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<tr>
<td>• <strong>Is Prasugrel More Effective Than Clopidogrel in Patients with Acute Coronary Syndrome Scheduled for PCI?</strong> [AFP Journal Club] (12/01/2008)</td>
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<tr>
<td>• <strong>Contemporary Management of Angina: Part II. Medical Management of Chronic Stable Angina</strong> (01/01/2000)</td>
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<tr>
<td>• <strong>ACC/AHA Revise Guidelines for Coronary Bypass Surgery</strong> [Practice Guidelines] (05/01/2000)</td>
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**Complications and Special Situations**

| • **Beta Blockers and Noncardiac Surgery: Why the POISE Study Alone Should Not Change Your Practice** [AFP Journal Club] (03/15/2010) |
- Preparation of the Cardiac Patient for Noncardiac Surgery (03/01/2007)
- Right Ventricular Infarction: Specific Requirements of Management (09/15/1999)

Editorials and Letters
- Appropriate Aspirin Use for Primary Prevention of Cardiovascular Disease [Editorials] (06/15/2011)
- The Case Against Routine Aspirin Use for Primary Prevention in Low-Risk Adults [Editorials] (06/15/2011)
- Is There Benefit to Coronary Calcium Screening? [Editorials] (04/15/2007)

WEB RESOURCES
1. Cardiovascular medicine websites: http://www.clinicalevidence.org
2. American College of Cardiology: http://www.acc.org

Last revised: 3/23/12 (TPG)

I, __________________________ hereby attest I have read the above goals and objectives of the Cardiology Rotation and have reviewed them with __________________________, who acts as my faculty advisor. I hereby attest that I understand these goals and objectives, how they relate to the 6 core competencies set forth by the ACGME, and agree to work diligently within their constructs.

________________________________________             _____________
resident signature                                                                                         date

________________________________________             _____________
faculty advisor signature                                                                                   date