

Cardiology Ward Rotation
Cardiology Fellow Curriculum
Penn State Milton S. Hershey Medical Center

OVERVIEW

The cardiovascular fellow on the ward rotation will be responsible for the evaluation and ongoing care of patients admitted to the general cardiology ward service. Specific responsibilities include:

- See new patients admitted to the ward and HVICU (the fellow is not responsible to see all patients; generally patients with non-critical health issues admitted overnight will be seen by the resident on call and not by the fellow). For patients that are seen:
 - Document the indication for admission.
 - Perform of an appropriate history and physical (H&P) examination.
 - Review and document, by independent interpretation (when appropriate), all relevant diagnostic information including ECG's, images including chest x-rays, CT scans, echo-Doppler data, nuclear images, MRI scans, catheterization lab images, hemodynamic data and other information..
 - Review and document relevant biochemical lab data
 - Define a plan for inpatient care, including testing and treatment.
 - Base recommendations for testing and treatment on, when available, ACC/AHA guidelines. Indications for withholding standard treatment and testing must be deocumented.
 - Be able to present the history, physical examination and testing and/or treatment plans to the attending physician; if the presentation is given by a medical student or resident, be able to provide appropriate information not detailed by the presenter
- Communicate to the patient the diagnosis and recommend to the patient of any tests/or and treatments thought to be appropriate
 - Discuss in an appropriate manner with the patient the risks and benefits of tests and/or treatments
 - Promptly notify the patient of any relevant test results
- Education of the patient
 - As appropriate, about the disease(s)/diagnose(s)
 - About health measures (such as diet, weight loss, cessation of smoking)
- Oversee the residents and medical students on the service in regards to patient care
- Provide education to the residents and medical students on the service

EDUCATIONAL GOALS

Cardiovascular fellows will acquire the necessary skills to diagnose and manage a wide spectrum of cardiovascular diseases including but not limited to coronary artery disease, valvular heart disease, diseases of the myocardium, diseases of the pericardium and congenital heart disease, cardiac arrhythmias, conduction disorders and syncope. Fellows will develop the necessary skills to obtain

a thorough cardiac history and perform a physical examination. This shall include the evaluation of normal and abnormal heart sounds, evaluation of heart murmurs, including provocative maneuvers that accentuate or decrease intensity of murmurs. The fellow will acquire the necessary skills to recognize the peripheral manifestations of cardiac dysfunctions. The fellow will learn the indications and contraindications for performing diagnostic studies. Adherence to published “appropriateness criteria” for diagnostic tests is expected. In addition, the fellow will become proficient in analyzing diagnostic data to establish a cardiovascular diagnosis and treatment plan. The fellow will acquire experience in the clinical analysis of surface and intracardiac ECG recordings, chest radiographs, stress echo and nuclear images, CT scans, M-mode and 2-D echocardiograms, Doppler and catheter hemodynamics, coronary angiography, and contrast ventriculography. Opportunities to review new imaging modalities including cardiac MRI and 3-D echo will be encouraged.

The fellow will enhance his/her abilities to teach medical students and residents, both formally and informally (didactically and at the bedside).

The fellow will enhance his/her abilities to communicate to patients.

TRAINING OBJECTIVES

- To develop the knowledge and skills required to obtain a proper cardiac history. Specific areas include, but are not limited to, characterization of chest pain (including the differential diagnosis of various etiologies of chest pain syndrome based on historical description), dyspnea (with differentiating cardiac from pulmonary causes of dyspnea), exercise capacity and functional class. In addition, special emphasis should be paid to medications, medication compliance, dietary habits, smoking and alcohol consumption as well as other risk factors for cardiac diseases. **(Patient Care, Medical Knowledge, Practice-Based Learning, Interpersonal and Communication Skills)**
- To become proficient in cardiac physical examination. The complete bedside examination includes palpation of all pulses, recognition of pulse characteristics, and blood pressure examinations in both upper and lower extremities, especially when delayed or absent femoral pulses are obtained. The cardiac resident should also be able to estimate jugular venous pressure as well as characterize different waves in the neck, detect bruits, examine lung fields, and define the precise location and characterization of left and right ventricular impulses. Proficiency is required for auscultation of heart sounds as it relates to intensity, splitting and additional heart sounds such as murmurs, rubs and clicks. To accurately assess the characterization of murmurs with regard to timing pitch, grade, maximal intensity and radiation and the effect of provocative maneuvers in eliciting the origin of the murmur. To recognize the peripheral manifestations of heart dysfunction such as palpable and/or pulsatile liver, anasarca, ascites, peripheral edema or sacral edema. **(Patient Care, Medical Knowledge)**

- To accurately assess the presence or absence of congestive heart failure. To evaluate whether murmurs of valvular heart disease such as mitral regurgitation, mitral stenosis, aortic regurgitation and tricuspid regurgitation contribute singularly or in combination to the clinical picture of congestive heart failure. **(Patient Care, Medical Knowledge)**
- To accurately assess the presence or absence of abdominal aneurysms and the presence or absence of peripheral vascular disease. **(Patient Care, Medical Knowledge)**
- To assess the normal auscultatory findings in pregnant patients and to be able to differentiate pregnant patients with valvular heart disease or congenital heart disease from physiological heart sounds of pregnancy. **(Patient Care, Medical Knowledge, Practice-Based Learning)**
- To become skilled in ECG interpretation of hypertrophy, conduction disturbances, heart block, WPW, acute infarction versus chronic infarction pattern as well as other syndromes and conditions. **(Patient Care, Medical Knowledge, Practice-Based Learning)**
- To learn how to interpret cardiac images (chest X-ray, CT, MRI, nuclear, echo, and angiograms) focusing on assessment of heart structure and function. **(Patient Care, Medical Knowledge, Practice-Based Learning)**
- To learn to interpret laboratory data to assist with risk stratification and treatment. **(Patient Care, Medical Knowledge, Systems-Based Practice, Practice-Based Learning)**
- To understand the clinical value of different therapeutic interventions including medical, percutaneous, surgical and device as well as device therapy in the management of all types of adult cardiovascular disease. **(Patient Care, Medical Knowledge, Systems-Based Practice, Practice-Based Learning, Interpersonal and Communication Skills)**
- To learn to assess the risk of and treat adverse cardiac events in the perioperative period for patients referred for non-cardiac surgery **(Patient Care, Medical Knowledge, Systems-Based Practice, Practice-Based Learning)**
- To learn about the chronicity and long-term characteristics of various cardiac diagnoses, such as congestive heart failure, valvar disease (such as aortic stenosis and mitral regurgitation), and chronic coronary artery disease. **(Patient Care, Medical Knowledge, Practice-Based Learning)**
- To interact in a professional manner with the patient in a compassionate and caring manner; to demonstrate sensitivity and responsiveness to the gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities of patients and professional colleagues; to adhere to principles of confidentiality, scientific/academic integrity and informed consent. **(Patient Care, Communication Skills, Professionalism)**

- To interact with the health care team including nurses, physician assistants, technicians, social workers, nutritionists, physical therapists, respiratory therapists as well as other physicians. **(Patient Care, Medical Knowledge, Systems-Based Practice, Interpersonal and Communication Skills, Professionalism)**
- Learn how to utilize hospital and community resources for managing cardiac patients in the outpatient setting. **(Systems-Based Practice, Practice-Based Learning, Patient Care and Interpersonal and Communication Skills)**
- Access and critically evaluate current medical information and scientific evidence. Use information technology or other available methodologies to access and manage information, support patient care decisions and enhance both patient and physician education. **(Patient Care, Medical Knowledge, Systems-Based Practice, Practice-Based Learning and Improvement)**

PRINCIPLE TEACHING METHODS

- The attending cardiologist on the ward service will serve as a mentor for the fellow. The mentor–student relationship will be utilized as the main teaching method after the fellow has seen and examined the patient and presented the patient’s findings and plans to the attending. The fellow is expected to utilize available scientific research, published guidelines and expert opinion to assist with decision making and learning.
- Discrepant findings on diagnostic data, controversial issues and differences of opinion will be discussed with the attending cardiologists. When appropriate the attending will examine the patient and discuss discrepancies of examination with the fellow.

EVALUATION METHODS

- The attending cardiologist will utilize a standardized evaluation process to assess the performance of the cardiac resident. A written evaluation of the cardiac fellows’ performance on the consultative service will be made each six months by the cardiology attendings assigned to the out-patient continuity clinic. The cardiology attending will evaluate each fellow according to the ACGME general competencies including: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and systems-based practice. In addition, bedside skills such as obtaining history, physical examination and performance of cardiac procedures will be evaluated. The fellowship director will meet with each cardiac fellow at the end of each six month rotation to review the written evaluation. Fellows are required to electronically sign each evaluation in the New-Innovations program.

EDUCATIONAL CONTENT

On the general cardiology ward service patients may be admitted to a general cardiology floor, to an area allowing intermediate care monitoring, or to an intensive care unit. Patients may be referred for admission or may be admitted via the emergency room or outpatient clinic. Patients with a variety of cardiac disorders including but not limited to coronary artery disease, hypertension, peripheral vascular disease, hyperlipidemia, valvular heart disease, myocardial and peripheral disease, endocarditis, pericardial diseases and congenital heart disease will form the service. Obviously patients of both genders are on the ward service. The age spectrum is from 18 years of age to occasional patients 100 years of age or more. Patients are of rural or urban background, from a wide range of socioeconomic groups, and of various ethnic backgrounds.

BIBLIOGRAPHY