

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

OVERVIEW

The cardiovascular fellow on the continuity clinic rotation will be responsible for the evaluation and ongoing care of patients referred to the fellow in the outpatient clinic. Specific responsibilities include:

- See the patient at the arranged time and date.
- Documentation of the indication for the referral and cardiac problem.
- Complete an appropriate history and physical (H&P) examination.
 - For first visits, this H&P will be comprehensive
 - On follow-up visits, the H&P will generally be less comprehensive but appropriate to the situation
- Review and document, by independent interpretation (when appropriate), of all relevant diagnostic information including ECG's, images including chest x-rays, CT scans, echo-Doppler data, nuclear images, MRI scans, catheterization lab images and/or hemodynamic data. Review and document relevant biochemical lab data.
- Document all cardiovascular diagnoses.
- Document clinical impressions with particular attention to addressing the question(s) asked by the requesting physician. Recommendations for testing and treatment will be consistent with the ACC/AHA guidelines. Indications for withholding standard treatment and testing must be defined.
- Define a plan for inpatient and outpatient follow up.
- Present the history, physical examination and testing and/or treatment plans to the attending physician
- Communicate promptly the diagnosis, recommendations and follow-up plan to the referring physician in the form of a letter, and if appropriate, by phone.
 - Notification of the referring physician the results of tests that were ordered
- Communication to the patient of the diagnosis; recommend to the patient any tests/or and treatments thought to be appropriate
 - Discussion in an appropriate manner with the patient of the risks and benefits of tests and/or treatments
 - Prompt notification the patient of the results of any tests
- Education of the patient
 - As appropriate about the disease(s)/diagnoses
 - Preventive health measures (such as diet, weight loss, cessation of smoking)

EDUCATIONAL GOALS

Cardiovascular fellows will acquire the necessary skills to diagnose and manage patients with 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 cardiology skills with emphasis on cardiac history taking, physical examination including 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.

TRAINING OBJECTIVES

- To develop the knowledge and skills required to obtain a proper cardiac history. Specific areas include 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 fellow 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. **(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, and surgical therapies 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 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 develop skills in communication by letter to referring physicians **(Interpersonal and Communication Skills)**

- To interact 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)**
- To learn how to utilize hospital and community resources for managing cardiac patients in the outpatient setting. Interact with staff in referring physician's offices, lipid clinics, coumadin clinics, cardiac rehabilitation, visiting nursing services (VNA), the OASIS program, and hospice. **(Systems-Based Practice, Practice-Based Learning, Patient Care and Interpersonal and Communication Skills)**
- To 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

- An attending cardiologist 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 all 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 fellow. 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 cardiology teaching attending 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.

- The cardiology attending will perform a yearly chart review of each fellow's work, analyzing letters/chart entries made about at least three patients. All letters/chart entries for the year for each patient will be analyzed. An assessment form will be filled out for each patient and the attending will discuss these forms with the fellow at the time of the attending meets with the fellow. See attached evaluation form.

EDUCATIONAL CONTENT

The out-patient continuity clinic will provide evaluations and patient care for patients referred by non-cardiology physicians and from in-hospital units after hospitalizations. Patients with a variety of cardiac disorders including 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 case mix on this service. Fellows will follow each patient throughout their three years of training.

Fellows will spend one morning each week in a continuity clinic. Two of these meet in the Outpatient Clinic on the ground of the Medical Center (UPC1, Suite 600). Two meet at the Lebanon Veteran's Hospital on Lincoln Ave, near Lebanon, PA.

Bibliography

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Fraker TD, Fihn SD: 2007 Chronic Angina Focused Update of the ACC/AHA 2002 Guidelines for the for the Management of Patients With Chronic Stable Angina: A Report of the American

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**PSMSH Cardiology Fellowship Program
Continuity Clinic Chart Review Evaluation Form**

Fellow Evaluated _____

Date _____

Evaluating Cardiology Attending _____

Patient (code with first initial of last name and last three digits of MRN) _____

Appropriateness of Patient Care exhibited (scale 1-9 [1 = very poor, 9 = superb])

Comment:

Quality of Medical Knowledge exhibited (scale 1-9 [1 = very poor, 9 = superb])

Comment:

Degree of Professionalism exhibited (scale 1-9 [1 = very poor, 9 = superb])

Comment:

Quality of communication to referring physician (scale 1-9 [1 = very poor, 9 = superb])

Comment:

Quality of chart documentation (scale 1-9 [1 = very poor, 9 = superb]))

Comment: