Acute Cardiology Service (ACS) Curriculum

I. Educational Purpose

The ACS service provides care to patients with a variety of acute cardiac diseases including management of ischemic heart disease, cardiac dysrhythmias, cardiomyopathies, valvular heart disease, myocarditis, pericarditis, endocarditis, hypertension, and shock and cardiac arrest. The service provides residents the opportunity to become proficient in the diagnosis and management of multiple cardiac abnormalities with patients aged 18 and older from varying ethnical and cultural backgrounds of both male and female genders. The service has coverage by cardiologists with extensive subspecialty training including interventional cardiology and EPS training:

The Cardiology Faculty include:

- Luna Bhatta, MD  Clinical Assistant Professor of Medicine
- Robert Carhart Jr., MD              Clinical Associate Professor of Medicine
- Fellowship Director
- Timothy Ford, MD                     Assistant Professor of Medicine, Division Chief
- Hani Kozman, MD  Assistant Professor of Medicine
- Kan Liu, MD, PhD                      Associate Professor of Medicine
- Debanik Chaudhuri, MD  Assistant Professor of Medicine
- Avneet Singh, MD  Assistant Professor of Medicine
- Tamás Szombathy, MD  Assistant Professor of Medicine
- Daniel Villarreal, MD  Professor of Medicine

II. Learning Venue

A. Rotation Description - The ACUTE CARDIOLOGY SERVICE team typically consists of at least 3 members including the attending, a fellow, a resident. On occasion there may be an acting intern, and medical students. The patient population is diversified. The average number of patients is 5-10.

Expectations of the resident: The resident is expected to write daily progress notes on each patient admitted to the service with an extensive knowledge of the patients including laboratory results and any special testing done while in the hospital. They will be required to pre-round on the patients in order to facilitate morning rounds on a daily basis. They will be responsible for presenting new patients to the team as well as old patients during morning rounds. They will be responsible for signing out the team’s patients to the night float and discharging patients, including discharge summaries, when patient’s are medically stable. They will also be involved in the transfer of patients from the ICU setting to medical floors. They will play a role in the education of the medical students as well as themselves on a daily basis.
B. Teaching Methods

1. Patient care and attending rounds - Work rounds will begin at approximately 0830 daily. The entire team, including the attending, will meet in the 8F (or other designated unit). Each patient will be examined and discussed at the bedside. Teaching will be done at all levels from the attending to the medical student during rounds with the attending playing a predominant role. Teaching will include proper interview techniques, physical exam skills, laboratory interpretation, note writing and didactic teaching. Formal teaching will be available in the form of lectures and conferences including: Invasive Cardiology Conference, Imaging Conference, Journal Club, an Echocardiography Conference, an EKG Conference, and a Cardiology Fellow’s Conference. Additional teaching will come in the form of formal brief presentations by the attending, resident, intern and students to the team as a group throughout the week. The presentations will be based on clinical problems or general cardiology topics encountered while caring for specific patients.

2. Recommended Reading

**CAD, MI, Unstable Angina and Chest Pain**


ACC/AHA Guidelines for the management of Non-STEMI. JACC 2016, 64, e139. JACC


Current Concepts: ST-Segment Elevation in Conditions Other Than Acute Myocardial Infarction


**Infective endocarditis**

Infective endocarditis. Moreillon, Y. Que The Lancet, Volume 363, Issue 9403, Pages 139-149 P.

**Pericarditis**

Myocarditis


**Cardiomyopathies**
Reference: Harrison's Textbook of Internal Medicine

**Restrictive Cardiomyopathy**

**Hypertrophic Obstructive Cardiomyopathy**

**Valvular Disorders**


Novel approaches to cardiac valve repair: from structure to function: Part II.  *Circulation*. 109(9):1064-72, 2004 Mar 9 Yacoub MH. Cohn LH.

**Hypertension**
Harrison's Textbook of Internal Medicine


**Endothelial Dysfunction:**

**Arrhythmias - Ventricular Tachycardias**


Supraventricular Tachycardias

Atrial Fibrillation:
ACC/AHA Guidelines for the management of atrial fibrillation. JACC 2014, 64, e1.


Implantable Cardioverter-Defibrillator

Syncope


Heart Failure
ACC/AHA Guidelines for the management of CHF. JACC 2013, 62, e147.


Electrocardiography
Marriot’s Textbook of Practical Electrocardiography. Latest Addition

3. Unique Learning Opportunities - In addition to the conferences listed above, the inpatient cardiology service provides several unique opportunities. Team members have access to all cardiac catheterizations including angioplasties and stenting as well as EP studies. They also take care of patients in an ICU setting including patients on ventilators and IABPs. Throughout most of the year there is a pharmD graduate and/or student present during rounds to provide detailed pharmacological information.

III. Mix of Diseases - The following list includes most of the diseases encountered while on the inpatient cardiology service.
A. Common Clinical Presentations
Abnormal heart sounds or murmurs
Chest pain
Dyspnea
Effort intolerance, fatigue
Hypertension
Intermittent claudication
Leg swelling
Palpitations
Peripheral vascular disease
Risk factor modification
Shock, cardiovascular collapse
Syncope, lightheadedness

B. Procedures
Advanced cardiac life support
Insertion of balloon-tipped pulmonary artery catheter (optional)
Insertion of temporary pacemaker (optional)
Stress electrocardiography (optional)
Echocardiography
Electrophysiology testing
Left ventricular catheterization and coronary angiography
Nuclear scan wall motion study
Right ventricular catheterization (including flotation catheter)
Stress electrocardiography and thallium myocardial perfusion scan
Tilt-table physiology study
External Pacing

IV. Educational Content
Arrhythmias
Atrial (flutter, fibrillation, etc)
Conduction abnormalities
Pacemaker management
Ventricular
Congenital Heart Disease
Congestive Heart Failure
Acute pulmonary edema
Chronic congestive heart failure
Diastolic
Systolic
Coronary Artery Disease
Angina pectoris, chronic stable
Angina Pectoris, unstable
Myocardial infarction, complicated
Myocardial infarction, uncomplicated
Myocardial infarction follow up
Postoperative care (CABG, PTCA)
Endocarditis
Hypertension
Chronic stable hypertension
Hypertensive crisis
Secondary Hypertension
Myocardial disease
Cardiomyopathy
Myocarditis
Pericardial Disease
Acute pericarditis
Pericardial Tamponade
Preoperative evaluation of the cardiac patient
Vascular Disease
Aneurysm (atherosclerotic, mycotic)
Aortic Disease
Arterial insufficiency
Chronic venous stasis
Deep Venous Thrombosis
Dissecting Aneurysm
Valvular heart disease
Patients with chest pain of unknown etiology
Pulmonary hypertension
Skills
Diagnosis and management of angina, unstable angina and acute MI (Acute Coronary Syndromes)
Diagnosis and management of acute and chronic CHF
Diagnosis and management of acute and chronic atrial fibrillation/flutter
Diagnosis and management of life threatening ventricular and atrial arrhythmias as outlined in the ACLS protocol
Diagnosis and management of patients with chest pain of unknown etiology
Evaluation of markers of myocardial injury
Indications for angioplasty, CABG and medical therapy in patients with CAD
Recognition of infarct patterns on a surface 12 lead EKG
Interpretation of PA catheter waveforms
Post-MI evaluation, risk stratification and management
Indications for noninvasive and invasive cardiac evaluation
Complications of cardiac catheterization and PTCA

IV. Method of Evaluation

Six core competencies are used for evaluation of team members. Interim evaluations are done throughout the rotation for praise of outstanding work and correction of substandard performance. At the end of each rotation all team members complete formal evaluations of each team member using the web-based E-value evaluation software.

V. Rotation Specific Competencies

Patient Care-Members of the ACS service must learn to treat some of the most complex medicine patients. Many of the patients found on the service have multiple diseases linked with or caused by their concomitant heart disease. This requires team members to have an integral understanding of the patient's entire physical well being rather than simply one perspective.

Medical Knowledge-Additional medical knowledge required to master while on the inpatient cardiology service includes understanding IABP, pacemakers, EPS, and cardiac catheterization.
Professionalism-The inpatient cardiology service requires a commitment to professionalism while providing care to terminally ill patients. Providing the best care for those patients requires that their overall quality of life be considered which often leads to end of life issues.

Interpersonal and communication skills- With consideration of the above, members of the inpatient cardiology service need to hone their communication skills not only with patients but also with family members in order to discuss sensitive topics such as end of life issues.

Practice based learning-Link to competency document.

Systems based learning-The inpatient cardiology service offers training in care for patients in an ICU setting. Also the multidisciplinary nature of this specialty affords residents the opportunity to work closely with community physicians, social workers, case managers and other specialist.

Reviewed & Revised by: Dr. Ford and Dr. Carhart
Date Revised: 6/24/16