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
Hani Kozman, MD Assistant Professor of Medicine
Kan Liu, MD, PhD Assistant Professor of Medicine
Robert Michiel, MD Assistant Professor of Medicine
Ali Salah, MD Assistant Professor of Medicine
Danish Siddiqui, MD Assistant Professor of Medicine
Harold Smulyan, MD Professor of Medicine
Tamas Szombathy, MD Assistant Professor of Medicine
Daniel Villarreal, MD Professor of Medicine; Division Chief

II. Learning Venue

A. Rotation Description The ACUTE CARDIOLOGY SERVICE team typically consists of 3-4 members including the attending, a fellow, a senior resident, 1 intern, and 1-3 medical students. The patient population is diversified. The average number of patients is 5-10.

Expectations of PGY-1 The intern 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 when
medically stable. They will play a role in the education of the medical students as well as themselves on a daily basis.

**Expectations of Senior Residents**-The residents have the same expectations as the interns in addition to their supervisory role. They will be responsible for teaching the interns, students and the team as a group. The will oversee all duties of the team and ensure quality medical care with timely and appropriate discharge planning. They will be responsible for timely dictations of discharge summaries. They will also partake in the admission of patients to other teams as required by the admitting resident. Senior residents are expected to model professionalism, interpersonal and communication skills, and the style of evidence based practice.

### B. Teaching Methods

1. **Patient care and attending rounds** - Work rounds will begin at 0830 daily. The entire team including the attending will meet in the ACS. 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**


**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:**


**Implantable Cardioverter-Defibrillator**


**Syncope**


**Heart Failure**


ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult [ACC/AHA]. Acc.org


**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. Villarreal and Dr. Carhart
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