

Name of rotation: **Complex Cardiology Service (CCS)** **Division: Cardiology**

Course Director: **Shawn Robinson, M.D.** **Site(s): UMH**

Duration of rotation: **one month only**
 2 weeks possible

General description of the rotation including educational purpose, rationale or value:

The CCS team cares for patients admitted with a broad range of cardiac pathology and severity of illness. The attending cardiologists on this service comprise the Cardiomyopathy and Pulmonary Hypertension Section. Thus, patients with congestive heart failure or pulmonary hypertension are preferentially admitted to this team, in addition to general cardiology diagnoses. Patients are located in either of 3 neighboring monitored wards, the CCU for critically ill patients, the PCU, a monitored cardiac unit for patients with intermediate severity, and the 3D telemetry unit for the most stable patients. The purpose of this rotation is to expose the residents to specialized care directed toward the patient with pulmonary hypertension and/or varying degrees of congestive heart failure. The wide range of illness severity provides the opportunity for teaching a comprehensive understanding of diagnostic and therapeutic decision making in these complex patients. In the CCU, Residents and interns will learn the evaluation and management of patients with critical cardiac disease, such as acute decompensated heart failure, myocardial infarctions, and ventricular arrhythmias. They improve their procedural skills and learn the management of anti-arrhythmic agents, thrombolytic therapy, vasopressor agents, counterpulsation support and left ventricular assist devices. Care of patients in the PCU and 3D telemetry units underscores the importance of medicine titration and transitioning successfully to outpatient regimens. In addition, housestaff will also learn appropriate indications for enrolling patients into investigational protocols when conventional therapy has become inadequate. The team consists of two upper level residents, 4 interns and 1 subintern. The cardiology attending along with a fellow closely supervises patient care.

Resident responsibilities, including interns and residents:

The residents are responsible for patient work-ups (including appropriate history, physical examinations and laboratory testing), daily follow-up care and charting of patients within the coronary care and progressive care units. The resident participates in daily rounds with an assigned cardiology fellow, attending cardiologist and patient care coordinator. Ultimate patient responsibility is that of the attending cardiologist, but the resident has substantial input into daily care and management of the patients. Interdisciplinary rounds provide residents with an opportunity to direct collaborative efforts with support services to provide optimal overall patient care, with special emphasis on dietary and rehabilitation aspects of cardiac care. The resident coordinates discharge arrangements for each patient with a nurse clinical care coordinator. Residents are expected to attend Cardiology Grand Rounds. The team consists of 2 residents and 4 interns on an every fourth night call schedule.

Educational Objectives: An expanded version of the competencies is listed under Core Competencies in Internal Medicine. Those listed here are specific to this rotation.

During this rotation, the PGY-1 resident will:

Patient Care

1. Develop increasing independence in patient evaluation and management of complex cardiac issues in a critical care setting, e.g., arrhythmias, ischemic heart disease, valvular heart disease, shock, congestive heart failure and pulmonary hypertension.
2. Develop risk stratification for a cost-effective strategy of invasive and non-invasive diagnostic cardiac evaluations.
3. Evaluate and manage patients with decompensated heart failure, chest pain and acute coronary syndromes.
4. Develop skills in triage both in and out of the CCU, by understanding indications for critical care support, prognosis, morbidity and mortality statistics.
5. Admit up to 5 patients in 24 hours (or 8 in 48 hours), detailing comprehensive history, physical examination, evaluation and management plan.
6. Write daily progress notes for all patients assigned to the intern.
7. Develop efficiency in providing cross-coverage to patients cared for by other interns.

Medical Knowledge

1. Expand knowledge base in internal medicine per specialty-specific objectives.
2. Discuss the principles of acute pharmacologic therapy related to decompensated heart failure, pulmonary hypertension, acute coronary syndromes as well as other life-threatening cardiac disorders.
3. List the indications, risks and therapeutic use of invasive hemodynamic monitoring, temporary transvenous pacemakers, counterpulsation balloon pumps, thrombolytic therapy, and coronary angiography.
4. Interpret basic and increasingly complex EKG's.
5. Interpret findings from stress tests, echocardiograms and coronary angiography.
6. List the indications, risks and therapeutic use of (non) invasive electrophysiology studies.
7. Complete certification in diagnostic procedures, e.g., thoracentesis, paracentesis, joint aspiration, lumbar puncture, arterial puncture for arterial blood gas determination and therapeutic procedures, e.g., central line placement.

Practice-Based Learning

1. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.

Interpersonal and Communication Skills – See master list for these competencies.

1. Enhance their interpersonal, leadership and teaching skills.
2. Develop skills in communicating with services outside of the Department of Medicine, particularly surgical services.

Professionalism – See master list for these competencies.**System-Based Practice**

1. Practice cost-effective health care and resource allocation that does not compromise quality of care.
2. Advocate for quality patient care and assist patients in dealing with system complexities.
3. Partner with health care managers and health care providers to assess, coordinate, and improve health care through interdisciplinary rounds.

During this training, the PGY-2 resident will:**Patient Care**

1. Develop increasing independence in patient evaluation and management of complex cardiac issues in a critical care setting, e.g., arrhythmias, ischemic heart disease, congestive heart failure, valvular heart disease, and shock.
2. Develop risk stratification for a cost-effective strategy of invasive and non-invasive diagnostic cardiac evaluations.
3. Evaluate and manage patients with decompensated heart failure, chest pain and acute coronary syndromes.
4. Develop efficiency in providing cross-coverage to patients cared for by other interns.
5. Develop increasing independence in patient evaluation and management.
6. Supervise interns and students in their daily patient care, overseeing all evaluation and management.

Medical Knowledge

1. Expand knowledge base in internal medicine per specialty-specific objectives.
2. Discuss the principles of acute pharmacologic therapy related to decompensated heart failure, pulmonary hypertension, acute coronary syndromes as well as other life-threatening cardiac disorders.
3. List the indications, risks and therapeutic use of invasive hemodynamic monitoring, temporary transvenous pacemakers, counterpulsation balloon pumps, thrombolytic therapy, and coronary angiography.
4. List the indications, risks and therapeutic use of (non) invasive electrophysiology studies.
5. Interpret basic and increasingly complex EKG's.
6. Incorporate findings from stress tests, echocardiograms and coronary angiography into decision-making.

7. Complete certification in diagnostic procedures, e.g., thoracentesis, paracentesis, joint aspiration, lumbar puncture, arterial puncture for arterial blood gas determination and therapeutic procedures, e.g., central line placement.

Practice-Based Learning

1. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.
2. Lead team discussions and review key literature pertinent to cases on the team.

Interpersonal and Communication Skills – See master list for these competencies.

Professionalism – See master list for these competencies.

System-Based Practice

1. Practice cost-effective health care and resource allocation that does not compromise quality of care.
2. Advocate for quality patient care and assist patients in dealing with system complexities.
3. Partner with health care managers and health care providers to assess, coordinate, and improve health care through interdisciplinary rounds.
4. Facilitate the learning of students and other health care professionals.

During this training, the PGY-3 resident will:

Patient Care

1. Evaluate and manage cardiac issues in a critical care setting in an independent fashion, e.g., arrhythmias, ischemic heart disease, congestive heart failure, valvular heart disease, and shock.
2. Risk stratify for a cost-effective strategy of invasive and non-invasive diagnostic cardiac evaluations.
3. Evaluate and manage patients with decompensated heart failure, chest pain and acute coronary syndromes in independent fashion with fellow / attending oversight.
4. Supervise interns and students in their daily patient care, overseeing all evaluation and management.

Medical Knowledge

1. Expand knowledge base in internal medicine per specialty-specific objectives.
2. Discuss the principles of acute pharmacologic therapy related to decompensated heart failure, pulmonary hypertension, acute coronary syndromes as well as other life-threatening cardiac disorders.
3. List the indications, risks and therapeutic use of invasive hemodynamic monitoring, temporary transvenous pacemakers, counterpulsation balloon pumps, thrombolytic therapy, and coronary angiography.
4. List the indications, risks and therapeutic use of (non) invasive electrophysiology studies.
5. Interpret complex EKG's.
6. Incorporate findings from stress tests, echocardiograms and coronary angiography into decision-making.
7. Complete certification in diagnostic procedures, e.g., thoracentesis, paracentesis, joint aspiration, lumbar puncture, arterial puncture for arterial blood gas determination and therapeutic procedures, e.g., central line placement.

Practice-Based Learning

1. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.
2. Lead team discussions and review key literature pertinent to cases on the team.

Interpersonal and Communication Skills – See master list for these competencies.

Professionalism – See master list for these competencies.

System-Based Practice

1. Practice cost-effective health care and resource allocation that does not compromise quality of care.
2. Advocate for quality patient care and assist patients in dealing with system complexities.
3. Partner with health care managers and health care providers to assess, coordinate, and improve health care through interdisciplinary rounds.
4. Facilitate the learning of students and other health care professionals.

Check all principle teaching methods used during this rotation:

- | | | | |
|-------------------------------------|--------------------------------------|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Attending teaching rounds | <input checked="" type="checkbox"/> | Interdisciplinary rounds |
| <input checked="" type="checkbox"/> | Patient management discussions | <input checked="" type="checkbox"/> | Small group discussions |
| <input checked="" type="checkbox"/> | Conferences specific to rotation | <input checked="" type="checkbox"/> | Bedside clinical rounds |
| <input checked="" type="checkbox"/> | Individual instruction of procedures | <input checked="" type="checkbox"/> | Review of diagnostic studies, including radiology |
| <input type="checkbox"/> | Other: _____ | | |

Describe the most important educational content, including the mix of diseases, patient characteristics, types of clinical encounters, procedures and services:

Exposure to acute cardiac care, discussion of management issues particularly as related to acute interventions, pharmacologic therapy, and risk factor modification.

Check the principal ancillary education materials used:

- | | | | |
|-------------------------------------|-----------------------------|-------------------------------------|------------------------------|
| <input type="checkbox"/> | Reading lists | <input type="checkbox"/> | Pathologic material |
| <input checked="" type="checkbox"/> | Radiologic studies | <input checked="" type="checkbox"/> | Other noninvasive studies |
| <input checked="" type="checkbox"/> | Handouts on relevant topics | <input checked="" type="checkbox"/> | Articles from the literature |
| <input type="checkbox"/> | Other: _____ | <input type="checkbox"/> | Case studies |

Methods used to evaluate the resident and the rotation:

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Evaluation of residency performance and professionalism |
| <input checked="" type="checkbox"/> | Evaluation of attending teaching skills and other attributes |
| <input checked="" type="checkbox"/> | Rotation assessment by resident |
| <input checked="" type="checkbox"/> | Observation of resident's clinical competency |
| <input checked="" type="checkbox"/> | Observation of resident's leadership and teaching skills |
| <input checked="" type="checkbox"/> | Review of the resident's history/physical exam, progress notes and documentation of procedures in the chart |
| <input checked="" type="checkbox"/> | Resident's attendance of rounds and conferences monitored |
| <input type="checkbox"/> | Other: _____ |

Identify strengths and limitations specific to the resources of the sponsoring institution:

Limitations: Number of acute MI patients is variable from month to month and exposure of (individual) residents to this most common life-threatening pathology may be variable.

Strengths: High caliber of teaching. Attending physicians and cardiology fellows who are there to educate and share knowledge.

Conferences or Attending/Patient Care Rounds: (Journal club, division rounds, etc.)

<u>Name</u>	<u>Location</u>	<u>Day</u>	<u>Time</u>
Attending Rounds	UMH	Daily	9:00-11:00 am
Cardiology Grand Rounds	Borges	Thursday	12:00 noon

The resident and faculty members of the Postgraduate Education Committee reviewed and edited the content of this curriculum at its meeting on 9/18/07.