

Cardiac Catheterization Laboratory Rotation Rhode Island Hospital

Overview of Rotation

Revision Date: June 9, 2009

I. GENERAL INFORMATION	
Name of Rotation	Cardiac Catheterization Laboratory
Director	J. Dawn Abbott, M.D.
Duration of Rotation	1 month
Location	Rhode Island Hospital
Administrative/Secretarial Contact & Phone	Arlene Grant 444-4581
Location to report on first day of rotation	Cardiac Catheterization Laboratory, APC 8 th floor
Resident Study/Resource Area	Cardiology fellows room

II. FACULTY	
Drs. D. Abbott, F. Christian, T. Drew, D. Levine, G. McKendall, R. Raymond, J. Robertson, B. Sharaf	
<p>Lines of Responsibility (in order): The cardiac cath lab team is composed of technologists, nurses, nurse practitioners, physician assistants, fellows and attending cardiologists. The team will interact with the referring cardiologists/internists and with cardiothoracic surgeons as needed. The team is led by the attending, who bears final responsibility for patient management or recommendations for management. The interventional and general cardiology fellows are next in line, followed by physician assistants and nurse practitioners as they are involved in the care of the patient.</p>	

III. GENERAL GOALS AND EDUCATIONAL OBJECTIVES FOR THIS ROTATION	
<p>General Goals: The goal of the rotation is to better understand the role of invasive testing in the modern day management of cardiovascular disease. The interaction and integration of the history and physical exam, pre-procedure imaging studies, hemodynamic and invasive imaging will be critically evaluated throughout the rotation. The fellow will have the opportunity to interact with multiple specialists with expertise in various areas of invasive/interventional cardiology.</p>	
<p>Objectives: During the rotation the fellow will participate in the acquisition, interpretation and reporting of invasive imaging modalities including hemodynamic data and invasive imaging and therapeutic techniques. The fellow will understand the complementary nature of the modalities as well the specific strengths and weaknesses of all the modalities. The fellow will have increasing responsibility for the care of the patient before, during and after the procedure as dictated by their level of experience. This will include case selection and planning during the procedure.</p>	

IV. TOPICS/TEACHING METHODS/MATERIALS USED DURING THIS ROTATION	
<p>Specific topics to be covered during this rotation: During the rotation the fellow will:</p> <ol style="list-style-type: none"> 1. Understand the indications/contra-indications, limitations and complications for cardiac catheterization and angiography. This will include pre and post cath evaluation and assessment. 	

2. Apply the current guideline statements for right and left heart cardiac catheterization and coronary angiography when evaluating patients.
3. Apply clinical cardiovascular pathophysiology and the interpretation of hemodynamic waveforms, valve area and shunt calculations, measurement of cardiac output and vascular resistances, and the interpretation of angiographic data in patient management.
4. Participate in the placement of pulmonary artery catheters at the bedside with interpretation of the data.
5. Place temporary right ventricular pacing catheters using fluoroscopically guided approaches.
6. Perform pericardiocentesis and understand the indications/contraindications for this procedure.

The *second year fellow* on the rotation will be expected to perform all of the above and in addition will:

1. Include patients with unstable coronary syndromes including acute myocardial infarction, complex valvular disease, coronary bypass graft angiography and the evaluation of restrictive and constrictive cardiomyopathies.
2. Achieve an advanced knowledge level regarding the limitation and complications of the higher acuity patient population.
3. Understand the need for and be able to perform brachial/radial artery catheterization
4. Understand the appropriate use for, insertion of, and management of complications of intra-aortic balloon pumps.

The *third year fellow* on the rotation will be expected to perform all of the above and in addition will:

1. Perform complex diagnostic cases including patients with variant anatomy, congenital heart disease, and peripheral arterial disease.
2. Gain an understanding of the indications, patient selection, and risks of percutaneous coronary interventions.
3. Participate in the education of first and second year fellows on the rotation.

Principal teaching methods (see Section IX):

Clinical teaching (A)

Clinical experiences (B)

Performance feedback

 Monthly evaluations (C1)

 Semiannual evaluation (C2)

Conferences (D)

Educational materials provided/referred to the resident: A cath lab manual is distributed to each first year cardiology fellow. The manual details the rotation and responsibilities, has a detailed list of suggested reading, and provides educational content in the form of a presentation and articles. In addition, a variety of text and electronic media area available in the cardiology fellow's room as well as in the cath lab cine room. Specific reference texts suggested for this rotation are:

Baim DS. Grossman's Cardiac Catheterization, Angiography, and Intervention.

"CardioVillage" at the SCAI.org website (interactive website with didactic instruction and self-assessment tutorials in invasive cardiology)

V. EVALUATIONS

A. Evaluation of the fellow's successful completion of the above goals will be carried out by the attending physicians, with additional input from nursing (see section IX). Assessment methods may include:

 Clinical performance ratings (1)

 Focused observation (2)

 360-degree assessment: Nursing and PA evaluations (3)

Faculty/staff meetings (4)
 Procedure logs (5)
 B. Fellows will evaluate the rotation annually.

VI. RESPONSIBILITY OF ATTENDING ON ROTATION

The attending on the rotation will be responsible for the final interpretation of all studies. The attending will review each patient's data and images performed that day with the fellow. Educational points of each study will be reviewed with an emphasis on evidence-based medicine regarding indications for, utilization and interpretation of and clinical application of the results in patient management. The attending will supervise the fellow in the preparation of the final report. For senior level fellows the attending will allow the fellow an increasing role in the care of the patient as warranted by their experience.

VII. RESPONSIBILITY OF RESIDENT ON ROTATION

The fellow will be responsible for the four major aspects of the procedure as follows:

1. Pre-cath evaluations-
 - a. A complete history and thorough physical examination
 - b. Pertinent pre-test laboratories
 - c. Pre-test non-invasive testing
 - d. Review of available prior cardiac catheterizations
2. Procedure performance-
 - a. Obtain vascular access
 - b. Perform catheterization and angiography as appropriate for their level of training with attending physician supervision
 - c. Review the hemodynamic and angiographic findings with the attending cardiologist following the procedure
3. Post-cath assessment
 - a. Assess the arterial and venous puncture sites for complications
 - b. Understand the symptoms, and findings associated with access complications
 - c. Understand and be able to manage the common complications following cardiac catheterization
4. Reporting and conferences
 - a. Complete the report in a timely fashion accurately reflecting the findings of catheterization and angiography
 - b. The more advanced fellow will understand the treatment options available along with their limitations and contra-indications.
 - c. Prepare appropriate patient's data for presentation at the weekly cardiac catheterization conference.

VIII. CONFERENCE AND CLINIC SCHEDULE SPECIFIC TO THIS ROTATION

	Monday	Tuesday	Wednesday	Thursday	Friday	
AM	Vascular conference (monthly)		Interventional conference (weekly)		Cardiology Division Conference (weekly)	
PM				Clinical Cath conference (weekly)		

IX. CORE COMPETENCY CURRICULUM		
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Competency Category	Specific Goals	Cath Lab (RIH, TMH)
Medical Knowledge	Demonstration of investigatory and analytical thinking relevant to the clinical rotation	A,B,C,D -- 1,2,4
	Acquisition the appropriate background relevant to specific rotations	B,C -- 1,2,4
Patient Care	Knowledge of the appropriate indications for diagnostic and therapeutic cardiology procedures	A,B -- 1,2
	Procedures: Arterial catheter insertion / Level 1 diagnostic catheterization	A,B,C -- 1,2,4,5
Practice-Based Learning & Improvement	Procedures: Right heart cath & temporary pacers	A,B,C -- 1,2,4,5
	Demonstration of self-critical thinking and motivation to improve	B,C -- 1,2,4
Professionalism	Commitment to professional responsibilities and ethics	B,C -- 1,2,4
Interpersonal & Communication	Commitment to ongoing professional development	B,C -- 1,2,4
	Commitment to developing effective relationships with referring clinicians, hospital services, and colleagues	A,B,C -- 1,2,3