

Rotation:
Cardiac Intensive Care Unit

Goals:

1. Provide medical residents with the knowledge base and practical experience in the evaluation and treatment of common acute cardiologic problems.
2. Distinguish cardiology conditions that can be managed by the general internist and those that require subspecialty consultation.

Objectives:

By the end of the Cardiac Intensive Care Unit rotation, PGY-1 residents are expected to expand and cultivate skills and knowledge learned during previous training and to achieve the following objectives based on the six general competencies. The resident should exhibit an increasing level of responsibility and independency as he or she progresses throughout the year.

Competency	Required Skill(s)	Teaching Method(s)	Formative Evaluation Method(s)	Frequency of Evaluation
Patient Care	SPECIALTY SPECIFIC OBJECTIVES			
	With attending present, obtain an accurate cardiologic history and physical examination in order to provide optimal care.	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Efficiently document medical records including content, organization, and improvement in documentation over the course of the rotation	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Implement effective, evidence-based patient management plans based on sound clinical decision-making	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Improve the content and format of discharge summaries during the rotation as medical knowledge and patient care skills are enhanced	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Choose appropriate cardiovascular tests based on best medical evidence and cost-effectiveness	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Explain and properly select the proper medications and monitoring devices for acute hemodynamic derangements	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Appropriately manage acute cardiovascular emergencies including: <ul style="list-style-type: none"> • Hemodynamic instability 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam	

	<ul style="list-style-type: none"> • Acute ischemic syndromes • Acute arrhythmias • Cardiopulmonary arrest 		Procedure Log	
	Acquire experience in the clinical situations requiring pacemaker therapy, an implanted cardiac defibrillator, and an intra-aortic balloon pump	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Along with attending, interpret electrocardiographic tracings particularly those showing arrhythmias, and demonstrate correct management of common ventricular and supraventricular arrhythmias	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Under direct supervision, perform the following procedures: <ul style="list-style-type: none"> • Central line placement • ABG collection and interpretation • Interpretation of arrhythmias • Interpretation of pulmonary artery catheter data 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	With presence of attending , evaluate, diagnose, and treat patients suffering from the following cardiac conditions including but not limited to: <ul style="list-style-type: none"> • Acute Coronary Syndrome (thrombolysis, primary angioplasty, and conservative management) • Urgent and emergent hypertension • Heart failure 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Under direct supervision, use anticoagulation therapy, including warfarin, heparin, and antiplatelet therapy	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
Medical Knowledge	SPECIALTY SPECIFIC OBJECTIVES			
	Develop a detailed knowledge base in cardiovascular pharmacology and pathophysiology of atherosclerotic cardiovascular disease	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Develop the knowledge base and management skills for the following conditions: acute coronary syndrome (thrombolysis, primary angioplasty, and conservative management), urgent and emergent hypertension, and heart failure.	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Develop the knowledge base and management skills in the use of anticoagulation therapy - warfarin, heparin, and antiplatelet therapy	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
Practice Based Learning and	SPECIALTY SPECIFIC OBJECTIVES			

Improvement	See General Internal Medicine Objectives for a comprehensive list.			
Interpersonal and Communication Skills	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Professionalism	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Systems-Based Practice	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			

By the end of the Cardiac Intensive Care Unit rotation, PGY-2 residents are expected to expand and cultivate skills and knowledge learned during previous training and to achieve the following objectives based on the six general competencies. The resident should exhibit an increasing level of responsibility and independency as he or she progresses throughout the year.

Competency	Required Skill(s)	Teaching Method(s)	Formative Evaluation Method(s)	Frequency of Evaluation
Patient Care	SPECIALTY SPECIFIC OBJECTIVES			
	Obtain an accurate cardiologic history and physical examination in order to provide optimal care.	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Efficiently document medical records including content, organization, and improvement in documentation over the course of the rotation	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Implement effective, evidence-based patient management plans based on sound clinical decision-making	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Improve the content and format of discharge summaries during the rotation as medical knowledge and patient care skills are enhanced	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Choose appropriate cardiovascular tests based on best medical evidence and cost-effectiveness	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Explain and properly select the proper medications and	Daily Rounds	ABIM global assessment	

	monitoring devices for acute hemodynamic derangements	Didactic Seminars Reading	form Written Exam Procedure Log	
	Appropriately manage acute cardiovascular emergencies including: <ul style="list-style-type: none"> • Hemodynamic instability • Acute ischemic syndromes • Acute arrhythmias • Cardiopulmonary arrest 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Identify clinical situations that require pacemaker therapy, an implanted cardiac defibrillator, and an intra-aortic balloon pump	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Interpret electrocardiographic tracings particularly those showing arrhythmias, and demonstrate correct management of common ventricular and supraventricular arrhythmias	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Under minimal supervision, perform the following procedures: <ul style="list-style-type: none"> • Central line placement • ABG collection and interpretation • Interpretation of arrhythmias • Interpretation of pulmonary artery catheter data 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Evaluate, diagnose, and treat patients suffering from the following cardiac conditions including but not limited to: <ul style="list-style-type: none"> • Acute Coronary Syndrome (thrombolysis, primary angioplasty, and conservative management) • Urgent and emergent hypertension • Heart failure 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Appropriately use anticoagulation therapy, including warfarin, heparin, and antiplatelet therapy	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
Medical Knowledge	SPECIALTY SPECIFIC OBJECTIVES			
	Continue to develop and begin to demonstrate a detailed knowledge base in cardiovascular pharmacology and pathophysiology of atherosclerotic cardiovascular disease	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Continue to develop and begin to demonstrate a detailed knowledge base and management skills for the following conditions: acute coronary syndrome (thrombolysis, primary angioplasty, and conservative management), urgent and emergent hypertension, and heart failure.	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	

	Continue to develop and begin to demonstrate a detailed knowledge base and management skills in the use of anticoagulation therapy - warfarin, heparin, and antiplatelet therapy	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
Practice Based Learning and Improvement	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Interpersonal and Communication Skills	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Professionalism	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Systems-Based Practice	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			

By the end of the Cardiac Intensive Care Unit rotation, PGY-3 residents are expected to expand and cultivate skills and knowledge learned during previous training and to achieve the following objectives based on the six general competencies. The resident should exhibit an increasing level of responsibility and independency as he or she progresses throughout the year.

Competency	Required Skill(s)	Teaching Method(s)	Formative Evaluation Method(s)	Frequency of Evaluation
Patient Care	SPECIALTY SPECIFIC OBJECTIVES			
	Obtain an accurate cardiologic history and physical examination in order to provide optimal care.	Daily Rounds Didactic Seminars	ABIM global assessment form Written Exam Procedure Log	
	medical record documentation including content, organization, and improvement in documentation over the course of the rotation	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Implement effective, evidence-based patient management plans based on sound clinical decision-making	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Improve the content and format of discharge summaries during the rotation as medical knowledge and patient care	Daily Rounds Didactic Seminars	ABIM global assessment form	

	skills are enhanced	Reading	Written Exam Procedure Log	
	Choose appropriate cardiovascular tests based on best medical evidence and cost-effectiveness	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Explain and properly select the proper medications and monitoring devices for acute hemodynamic derangements	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Appropriately manage acute cardiovascular emergencies including: <ul style="list-style-type: none"> • Hemodynamic instability • Acute ischemic syndromes • Acute arrhythmias • Cardiopulmonary arrest 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Identify the clinical situations that require pacemaker therapy, an implanted cardiac defibrillator, and an intra-aortic balloon pump	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Interpret electrocardiographic tracings particularly those showing arrhythmias, and demonstrate correct management of common ventricular and supraventricular arrhythmias	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	With minimal to no supervision, perform the following procedures: <ul style="list-style-type: none"> • Central line placement • ABG collection and interpretation • Interpretation of arrhythmias • Interpretation of pulmonary artery catheter data 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Evaluate, diagnose, and treat patients suffering from the following cardiac conditions including but not limited to: <ul style="list-style-type: none"> • Acute Coronary Syndrome (thrombolysis, primary angioplasty, and conservative management) • Urgent and emergent hypertension • Heart failure 	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Independently use anticoagulation therapy, including warfarin, heparin, and antiplatelet therapy	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
Medical Knowledge	SPECIALTY SPECIFIC OBJECTIVES			
	Demonstrate detailed knowledge base in cardiovascular	Daily Rounds	ABIM global assessment	

	pharmacology and pathophysiology of atherosclerotic cardiovascular disease	Didactic Seminars Reading	form Written Exam Procedure Log	
	Demonstrate knowledge base and management skills for the following conditions: acute coronary syndrome (thrombolysis, primary angioplasty, and conservative management), urgent and emergent hypertension, and heart failure.	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
	Demonstrate detailed knowledge base and management skills in the use of anticoagulation therapy - warfarin, heparin, and antiplatelet therapy	Daily Rounds Didactic Seminars Reading	ABIM global assessment form Written Exam Procedure Log	
Practice Based Learning and Improvement	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Interpersonal and Communication Skills	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Professionalism	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			
Systems-Based Practice	SPECIALTY SPECIFIC OBJECTIVES			
	See General Internal Medicine Objectives for a comprehensive list.			

Learning Venues:

1. The cardiac intensive care units at the VAMC, the Med, and MUH will form the core of the rotation. Residents will round at least daily and often twice daily with attending cardiologists with learning patient-centered.
2. Daily patient examinations, progress notes and discharge summaries will be reviewed by the attending physicians and feedback provided to housestaff.
3. Current articles from the literature will be provided at the beginning of the rotation with further literature supplementation from the Ward and Ambulatory Syllabi.
4. The rotation includes frequent didactic sessions on pathophysiology, basic testing in cardiology, and other topics.
5. An ECG review book is provided for each resident.

Reading List:

Acute Coronary syndromes

Gluckman TJ, Sachdev M, Schulman SF, Blumenthal RS.

A simplified approach to the management of non-ST -segment elevation acute coronary syndromes.

JAMA. 2005;293:349-57.

Sanchis J, Bodi V, Llacer A, Nunez J, Consuegra L, Bosch MJ, Bertomeu V, Ruiz V, Chorro FJ.
Risk stratification of patients with acute chest pain and normal troponin concentrations.
Heart. 2005;91:1013-1018.

Bugiardini R.
Risk stratification in acute coronary syndrome: focus on unstable angina and non-ST segment elevation myocardial infarction.
Heart. 2004;90:729-31.

Stable Angina

Abrams J.
Clinical practice. Chronic stable angina. N Engl J Med. 2005;352:2524-33.

Snow V, Barry P, Fihn SD, Gibbons RJ, Owens DK, Williams SV, Mottur-Pilson C, Weiss KB; American College of Physicians; American College of Cardiology Chronic Stable Angina Panel.
Primary care management of chronic stable angina and asymptomatic suspected or known coronary artery disease: a clinical practice guideline from the American College of Physicians.
Ann Intern Med. 2004;141:562-7

Lee TH, Boucher CA.
Clinical practice. Noninvasive tests in patients with stable coronary artery disease.
N Engl J Med. 2001;344:1840-5.

Competency Evaluation:

The ABIM global assessment form will be completed by attending physicians with a satisfactory to superior rating expected both in the six completencies and on the chart audit. An end-of-rotation written examination will be given to assess patient care and medical knowledge with a score of 80%+ expected. A procedure log either in written form or on-line must be kept.

Outcomes Assessment:

1. On the in-service examination the cardiology subsection score should be above the 50th percentile for all residents who have had the rotation.
2. On the ABIM certifying examination the cardiology subsection score should also be above the 50th percentile.
3. On the annual evaluation form completed by the residents, the CICU rotation should be rated as above the median for the program.