

APPENDIX C – ROTATIONAL CURRICULUM

Cath Lab Curriculum Cardiology Fellowship Program Riverside Medical Center

Description: The goal of the cardiac cath lab months is to learn how to perform diagnostic angiograms (native arteries and grafts), right and left heart catheterizations, pericardiocentesis, temporary transvenous pacemakers, and intra-aortic balloon pump placement. The fellow will also be exposed to, and may assist at, cardiac interventions, peripheral angiography and interventions, and carotid angiography and interventions. The fellow will develop an understanding of intracardiac, pulmonary and trans-aortic hemodynamics.

In addition to the manual skills are outlined above, the fellow is responsible for knowing appropriate use criteria for the above procedures and the indication for catheterization in any patient in whose procedure the fellow will participate. The fellow should review pertinent patient clinical information as well as meet the patient prior to sedation to discuss the indications for the procedure, basics of the procedure, risks/benefits, and to answer questions. If there is a previous available cath film, that should be reviewed as well.

The fellow will also learn and maintain principles of radiation safety and of the judicious use of contrast.

Recommended rotations: 6 months

Specifics: The cardiac cath lab months are currently scheduled 2 at a time to maintain skill level, rather than one at a time scheduled sporadically. The initial 2 cath lab months will be scheduled toward the end of the fellow's first year. Individual alterations to this schedule can be made at the request of the fellow and the discretion of the program director.

While the fellow will scrub in cases with different faculty members, there is one faculty member who is ultimately responsible for monitoring the progress of a given fellow and for preparing the monthly evaluation. Currently, this attending also serves on the Clinical Competency Committee (CCC).

For any given case, the fellow should discuss with the attending the indication for the case and, as the fellow progresses, complications that may be anticipated given the previous cardiac history and clinical characteristics of the patient.

In the first month as a cath fellow, the fellow must remove the sheath and maintain hemostasis for 10 radial approach cases and 15 groin approach patients. The fellow will need to be signed off by the end of the first month. As far as possible, the fellow should pull the sheaths on those patients on whom the fellow has performed a procedure. The attendings must allow the fellow to have hands on experience in the cath lab, performing as much in a given procedure as comfort allows. The attending must be present for a case and will briefly discuss the patient prior to initiating the procedure. Afterward, the findings of the case will be discussed between the fellow and the attending. Reports and paperwork will be completed by the fellow and reviewed and co-signed by the attending.

Suggested reading: Braunwald Cardiology, Grossman & Baim's Cardiac Catheterization, Angiography, and Intervention

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. ***Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.***

Reporting Milestones: PC1 – Invasive Cardiovascular Testing PC3 – Acute Care			
Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate competence in prevention, evaluation and management of the following: <ul style="list-style-type: none"> • Arrhythmias • Acute myocardial infarction and other acute ischemic syndromes • Cardiomyopathy • Cardiovascular evaluation of patients undergoing non-cardiac surgery • Congestive heart failure • Coronary heart disease • Acute coronary syndromes • Chronic coronary heart disease • Diseases of the aorta • Heart disease in pregnancy • Hypertension • Peripheral vascular disease • Pericardial disease • Pulmonary hypertension • Thromboembolic disorders • Valvular heart disease 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Demonstrate competence in the practice of health promotion, disease prevention, diagnosis, care and treatment of patients of each gender, from adolescence to old age, during health and all stages of illness.	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Identify life threatening cardiovascular conditions and emergencies and to be able to initiate prompt therapy.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
4. Develop a working knowledge of the risk/benefit assessment that must take place prior to performing an invasive cardiac procedure.	Didactic Board Review Bedside Teaching	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY4

	Clinical Teaching Rounds Role Modeling Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
5. Participate in the performance of invasive procedures only under the direct supervision of an attending cardiologist.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
6. Master the development of acute and chronic management plans for patients with cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
7. Apply evidence-based medicine to develop comprehensive acute and chronic management plans for the full spectrum of cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
8. Skillfully select and interpret the most appropriate cardiac tests for individual patients and to expertly apply the results leading to the safest and most optimal care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
9. Manage all cardiac patients expertly and should be able to function independently as a consultant cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
10. Appropriately interpret and apply all data to enhance patient care.	Didactic Board Review Bedside Teaching	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY6

	Clinical Teaching Rounds Role Modeling Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
--	---	--	--

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. *Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.*

Reporting Milestones:

MK1- Cardiovascular Testing

MK2- Critical Thinking for Diagnosis and Therapy

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate knowledge of the following content areas: Basic science, including: <ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular metabolism • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology Primary and secondary prevention of cardiovascular disease, including: <ul style="list-style-type: none"> • Biostatistics • Clinical epidemiology • Cardiac rehabilitation • Current and emerging risk factors; and cerebrovascular disease Evaluation and management of patients: <ul style="list-style-type: none"> • Adult congenital heart disease • Cardiac trauma • Cardiac tumors cerebrovascular disease • Geriatric cardiology 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Demonstrate the critical knowledge base that will permit them to function as a competent well-rounded cardiologists in the following areas: <ul style="list-style-type: none"> • Coronary artery disease • Myocardial diseases 	Didactic Board Review Bedside Teaching Clinical Teaching Rounds	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY4

<ul style="list-style-type: none"> • Heart failure • Congenital heart disease • Valvular heart disease • Peripheral vascular disease • Diseases of the aorta • Cardiovascular prevention • Hypertension • Pericardial diseases • Cardiac dysrhythmias • Clinical electrophysiology • Cardiothoracic surgery • Pulmonary hypertension 	<p>Role Modeling Independent Learning</p>	<p>In-Training Exam Direct Observation Indirect Supervision</p>	
<p>3. Demonstrate knowledge of the scientific method of problem solving and evidence-based decision making.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5 PGY6</p>
<p>4. Demonstrate a knowledge of indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests/procedures.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5 PGY6</p>
<p>5. Identify the risks benefits and indications of various invasive and non-invasive cardiac procedures and tests.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5</p>
<p>6. Recite the basic literature related to cardiovascular testing and procedures.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation</p>	<p>PGY4</p>

		Indirect Supervision	
7. Develop a reading program that will build the foundation of basic cardiology knowledge necessary to become a competent clinical cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
8. Demonstrate an understanding of the pathophysiologic basics of common cardiovascular diseases and use this knowledge to help guide clinical management decisions.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
9. Demonstrate how best to utilize cardiac procedures in the care of patients.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
10. Critically review and be well-versed in all aspects of cardiology literature and apply it in an evidenced-based manner to the care of patients.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
11. Teach medical students, residents, and junior cardiology fellows on clinical services, laboratory and non-laboratory setting and actively participate in conferences.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBLI1- Evidence-Based and Informed Practice

PBLI2- Reflective Practice and Commitment to Personal Growth

PBLI3- Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Identify strengths, deficiencies, and limits in one’s knowledge and expertise	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Set learning and improvement goals	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Identify and perform appropriate learning activities	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Incorporate formative evaluation feedback into daily practice	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

6. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
7. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
8. Participate in the education of patients, families, students, fellows and other health professionals	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
9. Obtain procedure-specific informed consent by competently educating patients about rationale, technique, and complications of procedures.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

Interpersonal and Communication Skills

Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Reporting Milestones:

ICS1- Patient and Family-Centered Communication

ICS2- Interprofessional and Team Communication

ICS3- Communication within Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; including the risks and benefits of various cardiac procedures.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY4 PGY5 PGY6

		In-Training Exam Direct Observation Indirect Supervision	
2. Communicate effectively with physicians, other health professionals, and health related agencies.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Work effectively as a member or leader of a health care team or other professional group.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Act in a consultative role to other physicians and health professionals.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Maintain comprehensive, timely, and legible medical records.	Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Contribute to patient management discussion on round in conjunction with the staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
7. Properly document procedure findings and document a thorough and accurate report on any procedure performed.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4

8. Introduce first year fellows to the program and to assist with bedside procedures such as: <ul style="list-style-type: none"> • PA catheter placement • temporary pacemaker placement • transthoracic echocardiography 	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
9. Demonstrate improved written and verbal communication skills relative to direct patient care reporting.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
10. Write complete accurate, and informative consults as well as detailed and accurate procedure reports.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

<h2 style="text-align: center;">Professionalism</h2>			
Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.			
Reporting Milestones:			
PROF1- Accountability			
PROF2- Self-Awareness and Well-Being			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate compassion, integrity, and respect for others	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Demonstrate responsiveness to patient needs that supersedes self-interest	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY4 PGY5 PGY6

		Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
3. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.	Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
7. Function as team leader for the clinical cardiovascular services under the direction of the assigned staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:			
SBP1- Patient Safety and Quality Improvement			
SBP2- System Navigation for Patient-Centered Care			
SBP3- Physician Role in Health Care System			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Advocate for quality patient care and optimal patient care systems.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY4 PGY5 PGY6

		In-Training Exam Direct Observation Indirect Supervision	
--	--	--	--

Inpatient/Critical Care Rotation Cardiology Fellowship Program Riverside Medical Center

Description: The goal of the inpatient months is to expose the fellow to all stages of inpatient care. The inpatient fellow will perform the consult on all In-Patient and IMCU patients on whom cardiology is consulted. While the primary focus is on care of the cardiac patients in the intensive care unit, the fellow is expected to follow the non-cardiac surgery patients through the remainder of their hospital stay, including to the IMCU and telemetry units, assuming that they have active cardiology issues. As part of their responsibilities, the fellow will discuss the plan of care with the individual cardiology attendings and will write the daily progress note.

Recommended rotations: 12 months

Specifics: The fellow is expected to round early in the morning in order to be prepared to discuss the patient's course and treatment decisions with the attending. The fellow will be the first to see the ICU consults as they are requested.

As far as is feasible, and in consideration for medicine residents who also may be assigned to a patient, the fellow should perform procedures including arterial lines and central lines. If any ICU patient needs a TEE, the in-patient fellow will be the fellow participating with the designated attending. Also, as far as possible and with precedence given to the cath lab fellow, the in-patient fellow is encouraged to scrub in angiograms and right and left heart catheterizations.

The fellow will meet for one hour daily with the weekly cardiology attending, with topics to be chosen by the attending and/or the fellow.

Suggested Reading: **Principles of Critical Care, 4e** Hall, Schmidt and Kress, **Mayo Clinic Cardiology Concise Textbook, 4th Edition**, by Murphy and Lloyd

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. ***Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.***

Reporting Milestones:

PC3 – Acute Care

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate competence in prevention, evaluation and management of the following: <ul style="list-style-type: none"> • Arrhythmias 	Didactics Board Review	End of Rotation Evaluation 360 Degree Evaluation	PGY4 PGY5

<ul style="list-style-type: none"> • Acute myocardial infarction and other acute ischemic syndromes • Cardiomyopathy • Cardiovascular evaluation of patients undergoing non-cardiac surgery • Congestive heart failure • Coronary heart disease • Acute coronary syndromes • Chronic coronary heart disease • Diseases of the aorta • Heart disease in pregnancy • Hypertension • Infectious and inflammatory heart disease • Lipid disorders and metabolic syndrome • Need for end-of life (palliative) care • Peripheral vascular disease • Pericardial disease • Pulmonary hypertension • Thromboembolic disorders • Valvular heart disease 	<p>Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY6</p>
<p>2. Demonstrate competence in the practice of health promotion, disease prevention, diagnosis, care and treatment of patients of each gender, from adolescence to old age, during health and all stages of illness.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5 PGY6</p>
<p>3. Obtain an accurate and complete cardiac history and perform a thorough but directed cardiac examination for patients being evaluated for a wide variety of cardiovascular diseases.</p>	<p>Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>4. Develop a differential diagnosis and a plan of care for common acute and chronic cardiovascular disease states, using information available from history, physical exam, and test results.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>

5. Identify life threatening cardiovascular conditions and emergencies and to be able to initiate prompt therapy.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
6. Develop a working knowledge of the risk/benefit assessment that must take place prior to performing an invasive cardiac procedure.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
7. Participate in the performance of invasive procedures only under the direct supervision of an attending cardiologist.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
8. Master the development of acute and chronic management plans for patients with cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
9. Apply evidence-based medicine to develop comprehensive acute and chronic management plans for the full spectrum of cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
10. Skillfully select and interpret the most appropriate cardiac tests for individual patients and to expertly apply the results leading to the safest and most optimal care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

11. Manage all cardiac patients expertly and should be able to function independently as a consultant cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
12. Appropriately interpret and apply all data to enhance patient care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. ***Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.***

Reporting Milestones:

MK2 – Critical Thinking for Diagnosis and Therapy

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate knowledge of the following content areas: Basic science, including: <ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular metabolism • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology • Genetic causes of cardiovascular disease • Molecular biology of the cardiovascular system Primary and secondary prevention of cardiovascular disease, including: <ul style="list-style-type: none"> • Biostatistics 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

<ul style="list-style-type: none"> • Clinical epidemiology • Cardiac rehabilitation • Current and emerging risk factors; and cerebrovascular disease <p>Evaluation and management of patients:</p> <ul style="list-style-type: none"> • Adult congenital heart disease • Cardiac trauma • Cardiac tumors cerebrovascular disease • Geriatric cardiology 			
<p>2. Demonstrate the critical knowledge base that will permit them to function as a competent well-rounded cardiologists in the following areas:</p> <ul style="list-style-type: none"> • Coronary artery disease • Myocardial diseases • Heart failure • Congenital heart disease • Valvular heart disease • Peripheral vascular disease • Diseases of the aorta • Cardiovascular prevention • Hypertension • Pericardial diseases • Cardiac dysrhythmias • Clinical electrophysiology • Cardiothoracic surgery • Pulmonary hypertension 	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>3. Demonstrate knowledge of the scientific method of problem solving and evidence-based decision making</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5 PGY6</p>
<p>4. Identify the risks benefits and indications of various invasive and non-invasive cardiac procedures and tests.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5</p>
<p>5. Recite the basic literature related to cardiovascular testing and procedures.</p>	<p>Didactic Board Review Bedside Teaching</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation</p>	<p>PGY4</p>

	Clinical Teaching Rounds Role Modeling Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
6. Identify the indications, contraindications, and potential complications related to each major cardiovascular procedure.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
7. Participate in the performance of invasive procedures only under the direct supervision of an attending cardiologist.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
8. Develop a reading program that will build the foundation of basic cardiology knowledge necessary to become a competent clinical cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
9. Demonstrate an understanding of the pathophysiologic basics of common cardiovascular diseases and use this knowledge to help guide clinical management decisions.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
10. Demonstrate how best to utilize cardiac procedures in the care of patients.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
11. Critically review and be well-versed in all aspects of cardiology literature and apply it in an evidenced-based manner to the care of patients.	Didactic Board Review Bedside Teaching	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY4 PGY5 PGY6

	Clinical Teaching Rounds Role Modeling Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
12. Teach medical students, residents, and junior cardiology fellows on clinical services, laboratory and non-laboratory setting and actively participate in conferences.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBL11 - Evidence-Based and Informed Practice

PBL12 - Reflective Practice and Commitment to Personal Growth

PBL13 - Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Identify strengths, deficiencies, and limits in one's knowledge and expertise	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Identify and perform appropriate learning activities	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam	PGY4 PGY5 PGY6

		Direct Observation Indirect Supervision	
4. Incorporate formative evaluation feedback into daily practice	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
7. Participate in the education of patients, families, students, fellows and other health professionals	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
8. Obtain procedure-specific informed consent by competently educating patients about rationale, technique, and complications of procedures.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

Interpersonal and Communication Skills

Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Reporting Milestones:

ICS1 - Patient and Family-Centered Communication ICS2 - Interprofessional and Team Communication ICS3 - Communication within Health Care System			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Communicate effectively with physicians, other health professionals, and health related agencies.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Work effectively as a member or leader of a health care team or other professional group.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Act in a consultative role to other physicians and health professionals.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Maintain comprehensive, timely, and legible medical records.	Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Contribute to patient management discussion on round in conjunction with the staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY4

	Role Modeling Independent Learning	In-Training Exam Direct Observation Indirect Supervision	
7. Properly document procedure findings and document a thorough and accurate report on any procedure performed.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
8. Provide teaching to medical students and residents on the basics of common cardiovascular conditions and routine bedside invasive procedures. Teaching methods should include actively participating in case discussions on rounds, conducting brief teaching sessions, and introducing house staff to common cardiology literature sources.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
9. Introduce first year fellows to the program and to assist with bedside procedures such as: <ul style="list-style-type: none"> • PA catheter placement • temporary pacemaker placement • transthoracic echocardiography 	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
10. Demonstrate improved written and verbal communication skills relative to direct patient care reporting.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
11. Write complete, accurate, and informative consults as well as detailed and accurate procedure reports.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Professionalism

Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Reporting Milestones:

PROF1 - Accountability

PROF2 - Self-Awareness and Well-Being

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate compassion, integrity, and respect for others	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Demonstrate responsiveness to patient needs that supersedes self-interest	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.	Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY4 PGY5 PGY6

		Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
7. Provide leadership and guidance for medical students and residents as it relates to routine patient care.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
8. Function as team leader for the clinical cardiovascular services under the direction of the assigned staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:

SBP1 - Patient Safety and Quality Improvement

SBP2 - System Navigation for Patient-Centered Care

SBP3 - Physician Role in Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY4 PGY5 PGY6

		In-Training Exam Direct Observation Indirect Supervision	
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Advocate for quality patient care and optimal patient care systems.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
7. Participate in management discussions on teaching rounds in conjunction with the service attending.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4

Nuclear Curriculum

Cardiology Fellowship Program

Riverside Medical Center

Description: The fellow will gain knowledge and experience in nuclear imaging techniques, correlation of nuclear interpretations with subsequent anatomical findings, computer interpretation software, and trouble shooting and data analysis. The fellow will learn the indications and procedure for nuclear studies.

The fellow will acquire a working knowledge of radiation physics, radiation biology and radiation safety in preparation for the nuclear boards and eventual practice.

Required rotations: 5 months

Specifics:

1. The fellow will attend and, after he has observed 25 studies, may supervise the lexiscan nuclear tests, treadmill stress nuclear tests, and dobutamine lexiscan tests.
2. The fellow will read on a daily basis the nuclear tests with the assigned attending. It is preferable that these meetings be conducted in person. These meetings should include indications for the studies and the implications of the findings.
3. If feasible, the fellow may attend Authorized User classroom and laboratory training program. (COR scan)
4. The attending physician for any given day or week may rotate. In order to maintain continuity and in order to adequately assess the fellow's progress, that fellow will also meet weekly with the cardiology attending responsible for the nuclear rotation.
5. If there is no echo fellow on any given month, the nuclear fellow will also attend the echo-based stress tests including stress echoes and dobutamine stress tests. The fellow will also be responsible for supervision of treadmill stress tests. If there is no echo fellow on a given month, the nuclear fellow will also do the TEEs which would have been done by the echo fellow. (This does not include inpatient TEEs which are assigned to the inpatient fellow.
6. It is the responsibility of the nuclear fellow to read the daily pre-operative EKGs.
7. Finally, given that the fellow schedule during the nuclear month is sporadic, the fellow is encouraged to pursue research including case reports and both research and QI projects.

- .

Suggested reading: Nuclear Cardiology Review: A¹ Self Assessment Tool Jaber and Cerqueira; CORSCAN; Braunwald

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. ***Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.***

Reporting Milestones:

PC2 – Non-Invasive Testing

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate competence in prevention, evaluation and management of the following: <ul style="list-style-type: none"> • Acute myocardial infarction and other acute ischemic syndromes • Cardiomyopathy • Cardiovascular evaluation of patients undergoing non-cardiac surgery • Congestive heart failure • Coronary heart disease • Acute coronary syndromes • Chronic coronary heart disease 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
2. Demonstrate competence in the practice of health promotion, disease prevention, diagnosis, care and treatment of patients of each gender, from adolescence to old age, during health and all stages of illness.	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
3. Master the development of acute and chronic management plans for patients with cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
4. Apply evidence-based medicine to develop comprehensive acute and chronic management plans for the full spectrum of cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam	PGY6

	Independent Learning	Direct Observation Indirect Supervision	
5. Skillfully select and interpret the most appropriate cardiac tests for individual patients and to expertly apply the results leading to the safest and most optimal care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
6. Manage all cardiac patients expertly and should be able to function independently as a consultant cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
7. Appropriately interpret and apply all data to enhance patient care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. ***Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.***

Reporting Milestones:

MK1 – Cardiovascular Testing

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate knowledge of the following content areas: Select all the apply: Basic science, including: <ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular metabolism 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation	PGY5 PGY6

<ul style="list-style-type: none"> • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology • Molecular biology of the cardiovascular system <p>Primary and secondary prevention of cardiovascular disease, including:</p> <ul style="list-style-type: none"> • Biostatistics • Clinical epidemiology 		Indirect Supervision	
<p>2. Demonstrate a knowledge of indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests/procedures.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5 PGY6</p>
<p>3. Critically review and be well-versed in all aspects of cardiology literature and apply it in an evidenced-based manner to the care of patients.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5 PGY6</p>
<p>4. Demonstrate an understanding of the pathophysiologic basics of common cardiovascular diseases and use this knowledge to help guide clinical management decisions.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>5. Demonstrate how best to utilize cardiac procedures in the care of patients.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>6. Teach medical students, residents, and junior cardiology fellows on clinical services, laboratory and non-laboratory setting and actively participate in conferences.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam</p>	<p>PGY6</p>

	Independent Learning	Direct Observation Indirect Supervision	
--	----------------------	--	--

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBL11 - Evidence-Based and Informed Practice

PBL12 - Reflective Practice and Commitment to Personal Growth

PBL13 - Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Set learning and improvement goals	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
2. Identify and perform appropriate learning activities	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
3. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
4. Incorporate formative evaluation feedback into daily practice	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6

5. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
6. Participate in the education of patients, families, students, fellows and other health professionals	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6

Interpersonal and Communication Skills

Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Reporting Milestones:

ICS1 - Patient and Family-Centered Communication

ICS2 - Interprofessional and Team Communication

ICS3 - Communication within Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Communicate effectively with physicians, other health professionals, and health related agencies.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
2. Maintain comprehensive, timely, and legible medical records.	Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6

<p>3. Introduce first year fellows to the program and to assist with bedside procedures such as:</p> <ul style="list-style-type: none"> • PA catheter placement • temporary pacemaker placement • transthoracic echocardiography 	<p>Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>4. Demonstrate improved written and verbal communication skills relative to direct patient care reporting.</p>	<p>Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>5. Write complete accurate, and informative consults as well as detailed and accurate procedure reports.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY6</p>

Professionalism

Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Reporting Milestones:

PROF1 - Accountability

PROF2 - Self-Awareness and Well-Being

Objectives:

Fellows are expected to:

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
2. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
3. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
4. Function as team leader for the clinical cardiovascular services under the direction of the assigned staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:

SBP1 - Patient Safety and Quality Improvement
 SBP2 - System Navigation for Patient-Centered Care
 SBP3 - Physician Role in Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
4. Advocate for quality patient care and optimal patient care systems.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5 PGY6
6. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY5 PGY6

	Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
--	----------------------	--	--

Echocardiography Curriculum Cardiology Fellowship Program Riverside Medical Center

Description: The objective of the echocardiography rotation is to perform, interpret, identify appropriate use criteria (AUC) and generate reports for transthoracic echocardiograms, transesophageal echocardiograms, and stress echocardiograms. Conscious sedation is included in the performance of TEEs. To this end, the fellow will perform and read these tests under the guidance of the attending cardiologists, will give a presentation at echocardiography conference weekly, and will read independently.

Recommended rotations: 6 months

Specifics: During the first month of the first year, which typically occurs in the summer, the focus is on learning the basics of echo acquisition, learning the basics of echo interpretation, and learning the fundamentals of producing a report that is compliant with ICAEL guidelines. To accomplish these goals, it is recommended that the following actions be taken:

- 1) Meet with the echo attending 1-2 hours daily 3-5 days weekly to learn the echocardiographic basics of cardiac structure and function as well as the requirements for a complete, ICAEL compliant report
- 2) During the 2 echo months of the first year, the fellow should complete all 150 acquisitions that are required. It is suggested that 3-5 patients be imaged daily. This should be coordinated with the lead tech, as fellow imaging will impact the efficiency of the department. Problems can be directed to either the nurse manager or the medical director of cardiodiagnostics.
- 3) The echo simulator should be used at least an hour daily to improve the techniques of probe handling and hand-eye coordination.

During the second month of the first year, exposure to TEE will be emphasized. The fellow should check the scheduling book the night before and should be available to assist in all TEEs. "Assistance" will progress, as the fellow progresses, from simple observation initially ultimately to performing independently, under faculty observation, the entire TEE by the third year.

During the second and third years, the fellow is expected to continue development in echo interpretation, both TTE and TEE. To that end, the number of studies required daily will increase yearly. The first year fellow should read at least 12 echoes daily, the second year fellow should read 17 echoes daily, and the third year fellow should read 22 echoes daily.

Implicit in reading echocardiograms is reviewing the interpretations with the cardiologist who is reading any given study. This can be accomplished in person or electronically, but is most efficiently accomplished in person, simultaneous when the faculty member is reading, if feasible. It is the responsibility of the fellow to contact the faculty members to review echo interpretations.

The second year fellow will continue to meet for one hour daily, or as needed, with the echo attending. The third year fellow on the echo rotations is self-directed, although an attending is available if necessary.

As far as is feasible, every TEE performed should have a fellow involved. To approach this goal, all non-ICU TEEs are the responsibility of the monthly echo fellow to a maximum of 3 daily. The fellow should have reviewed the indications for the TEE and pertinent patient clinical information. The fellow should also meet the patient before the patient is sedated to explain the indications for, procedure, and risks and benefits of the TEE, and to answer questions.

TEEs on ICU patients, and any TEEs being performed on patients who are being followed by the critical care fellow, will be performed in conjunction with the critical care fellow.

If there is a TEE which cannot be performed by the echo fellow or the critical care fellow, it will become the responsibility of the nuclear fellow.

The supervision of non-nuclear stress tests is the responsibility of the echo fellow. This includes being present for the actual test as well as interpretation of the results and writing the report. The requirement for independent performance of stress testing is as follows: plain treadmill stress test 15 studies, stress echocardiogram 20 studies, dobutamine stress echoes 25 studies. The fellow must be supervised by a faculty member, and this supervision documented, before that fellow will be able to supervise stress tests independently.

On the occasional months when there is a nuclear fellow but no echo fellow, the nuclear fellow is responsible for supervising echo-based stress tests and treadmill stress tests.

Reading Suggestions: Feigenbaum, Klein and Asher (review), Ellestad (stress tests), Circulation guidelines for stress testing

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. ***Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.***

Reporting Milestones:

PC2 – Non-Invasive Testing

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate competence in prevention, evaluation and management of the following: <ul style="list-style-type: none"> • Arrhythmias • Acute myocardial infarction and other acute ischemic syndromes • Cardiomyopathy • Cardiovascular evaluation of patients undergoing non-cardiac surgery • Congestive heart failure • Coronary heart disease • Acute coronary syndromes • Chronic coronary heart disease • Diseases of the aorta • Heart disease in pregnancy • Hypertension • Infectious and inflammatory heart disease • Pericardial disease 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

<ul style="list-style-type: none"> • Pulmonary hypertension • Thromboembolic disorders • Valvular heart disease 			
2. Identify life threatening cardiovascular conditions and emergencies and to be able to initiate prompt therapy.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Master the development of acute and chronic management plans for patients with cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
4. Apply evidence-based medicine to develop comprehensive acute and chronic management plans for the full spectrum of cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
5. Skillfully select and interpret the most appropriate cardiac tests for individual patients and to expertly apply the results leading to the safest and most optimal care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
6. Manage all cardiac patients expertly and should be able to function independently as a consultant cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
7. Appropriately interpret and apply all data to enhance patient care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY6

	Role Modeling Independent Learning	In-Training Exam Direct Observation Indirect Supervision	
--	---------------------------------------	--	--

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. *Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.*

Reporting Milestones:

MK1 – Cardiovascular Testing

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate knowledge of the following content areas: Select all that apply: Basic science, including: <ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology • Genetic causes of cardiovascular disease Primary and secondary prevention of cardiovascular disease, including: <ul style="list-style-type: none"> • Biostatistics • Clinical epidemiology • Current and emerging risk factors; and cerebrovascular disease Evaluation and management of patients: <ul style="list-style-type: none"> • Adult congenital heart disease • Cardiac trauma • Cardiac tumors cerebrovascular disease 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Demonstrate the critical knowledge base that will permit them to function as a competent well-rounded cardiologists in the following areas: <ul style="list-style-type: none"> • Coronary artery disease • Myocardial diseases • Heart failure • Congenital heart disease • Valvular heart disease 	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4

<ul style="list-style-type: none"> • Peripheral vascular disease • Diseases of the aorta • Cardiovascular prevention • Hypertension • Pericardial diseases • Cardiac dysrhythmias • Clinical electrophysiology • Cardiothoracic surgery • Pulmonary hypertension 			
<p>3. Demonstrate a knowledge of indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests/procedures</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5 PGY6</p>
<p>4. Identify the risks benefits and indications of various invasive and non-invasive cardiac procedures and tests.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY5</p>
<p>5. Recite the basic literature related to cardiovascular testing and procedures.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>6. Demonstrate an understanding of the pathophysiologic basics of common cardiovascular diseases and use this knowledge to help guide clinical management decisions.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>7. Demonstrate how best to utilize cardiac procedures in the care of patients.</p>	<p>Didactic Board Review Bedside Teaching</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation</p>	<p>PGY5</p>

	Clinical Teaching Rounds Role Modeling Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
8. Critically review and be well-versed in all aspects of cardiology literature and apply it in an evidenced-based manner to the care of patients.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
9. Teach medical students, residents, and junior cardiology fellows on clinical services, laboratory and non-laboratory setting and actively participate in conferences.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
10. Develop a reading program that will build the foundation of basic cardiology knowledge necessary to become a competent clinical cardiologist.	Didactic	Develop a reading program that will build the foundation of basic cardiology knowledge necessary to become a competent clinical cardiologist.	Didactic

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBLI1 - Evidence-Based and Informed Practice

PBLI2 - Reflective Practice and Commitment to Personal Growth

PBLI3 - Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Set learning and improvement goals	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY4 PGY5 PGY6

	Independent Learning	In-Training Exam Direct Observation Indirect Supervision	
2. Identify and perform appropriate learning activities	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Incorporate formative evaluation feedback into daily practice	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
7. Participate in the education of patients, families, students, fellows and other health professionals	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

Interpersonal and Communication Skills

Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Reporting Milestones:

ICS1 - Patient and Family-Centered Communication

ICS2 - Interprofessional and Team Communication

ICS3 - Communication within Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Communicate effectively with physicians, other health professionals, and health related agencies.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Maintain comprehensive, timely, and legible medical records.	Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Contribute to patient management discussion on round in conjunction with the staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
4. Properly document procedure findings and document a thorough and accurate report on any procedure performed.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
5. Introduce first year fellows to the program and to assist with bedside procedures such as:	Didactic Bedside Teaching	End of Rotation Evaluation 360 Degree Evaluation	PGY5

<ul style="list-style-type: none"> • PA catheter placement • temporary pacemaker placement • transthoracic echocardiography 	Clinical Teaching Rounds Role Modeling Independent Learning	Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
6. Demonstrate improved written and verbal communication skills relative to direct patient care reporting.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
7. Write complete accurate, and informative consults as well as detailed and accurate procedure reports.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Professionalism			
Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.			
Reporting Milestones:			
PROF1 - Accountability PROF2 - Self-Awareness and Well-Being			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam	PGY4 PGY5 PGY6

		Direct Observation Indirect Supervision	
3. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Function as team leader for the clinical cardiovascular services under the direction of the assigned staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:

SBP1 - Patient Safety and Quality Improvement

SBP2 - System Navigation for Patient-Centered Care

SBP3 - Physician Role in Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation	PGY4 PGY5 PGY6

		Indirect Supervision	
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Advocate for quality patient care and optimal patient care systems.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
6. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

Electrophysiology Curriculum Cardiology Fellowship Program Riverside Medical Center

Description: The objective of the electrophysiology rotation is to understand the physiology, diagnose and manage patients with heart rhythm disorders. During this rotation, the cardiology fellow will learn the indication for implantable devices, diagnostic electrophysiology studies, ablation therapies, and device follow up. The fellow will also become more familiar with arrhythmias related to electrophysiology, pacemakers, ICDs, implantable loop recorders, biventricular pacing and radiofrequency ablation. At the end of the fellowship, the fellow should be able to understand appropriate function of an implantable device. This fellowship is not intended to be an electrophysiology fellowship.

Recommended rotations: Minimum of 2 months, more for those interested in further EP training

Specifics: Independent reading by the fellows is strongly encouraged to enable them to maximize the yield from this rotation. During the first rotation, typically in the early part of the second year, fellows are expected to enter the rotation after having thoroughly read a basic electrocardiography book. They should familiarize themselves with current arrhythmia and heart failure management guidelines as well as indications for device implantation and ablation. Knowledge of antiarrhythmic drugs, understanding the classification, contraindications to use and monitoring of side effects and potential toxicity.

RHYTHM INTERPRETATION

Fellows should aim to become proficient in interpreting ECGs and cardiac monitors. . They will have the opportunity to interpret cardiac monitors including Holter, event monitors as well as EKGs In close collaboration with the attendings. Telemetry monitors on inpatients should be thoroughly reviewed.

OUTPATIENT CLINIC AND INPATIENT ROUNDING

Fellows will see patients in the electrophysiology clinic in the outpatient setting as well as on the inpatient service under the supervision of the attending to help them to understand management of these patients. The fellow's will be expected to work in close collaboration with the attending to optimize their learning process. In the hospital setting, fellows are expected to have evaluated the patient and developed a management plan before presentation to the attending. Detailed review of all pertinent data and meticulous examination is expected.

DEVICE MANAGEMENT

Perform basic pacemaker, AICD and ILR interrogation and programming. Fellows are expected to work closely with the device technicians in the clinic in hospital setting to recognize potential emergencies and appropriate management. They should be able to recognize different types of implanted CIEDs on chest radiography.

PROCEDURAL KNOWLEDGE

Fellow should attend at least 1 each of an atrial fibrillation ablation, SVT ablation and PVC ablation. Attendance is also recommended in at least one pacemaker and AICD implantation. During attendance of ablations, fellows should also familiarize themselves with the different views that can be obtained with intracardiac echo. Fellows will also learn basics of cardiac imaging from the perspective electrophysiology including cardiac CT and MRI. They will be able to perform transesophageal echocardiograms prior to atrial fibrillation ablation under the guidance of the attending.

They should participate in and learn how to implant subcutaneous cardiac monitors.

Fellows who are interested in pursuing electrophysiology careers are strongly encouraged to scrub into device implantations to learn suturing techniques, recognizing intracardiac electrograms during device implantation as well as systematic approach to CIED implantation. They should also learn the basics of recognizing intracardiac electrograms, learn how to perform pacing and recording maneuvers during electrophysiology studies. Advanced fellows may be able to scrub into and perform electrophysiology procedures in conjunction with the attending.

Case presentation as well as literature review is strongly recommended during these rotations at the twice weekly cardiology conferences.

Suggested reading:

1. <https://www.ncbi.nlm.nih.gov/books/NBK482322/>
2. <https://www.hrsonline.org/guidance/clinical-resources/2018-acc/ahrs-guideline-evaluation-and-management-patients-bradycardia-and-cardiac-conduction>
3. <https://www.hrsonline.org/guidance/clinical-resources/2017-aha/acchrs-guideline-management-patients-ventricular-arrhythmias-and-prevention-sudden-cardiac>

4. <https://www.nature.com/articles/pr200525>
5. Handbook of Cardiac Electrophysiology: A Practical Guide to Invasive EP Studies and Catheter Ablation. Andrew D. Krahn and Francis D. Murgatroyd

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. *Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.*

Reporting Milestones:

PC1 – Invasive Cardiovascular Testing

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate competence in prevention, evaluation and management of the following: <ul style="list-style-type: none"> • Arrhythmias • Acute myocardial infarction and other acute ischemic syndromes • Cardiomyopathy • Cardiovascular evaluation of patients undergoing non-cardiac surgery • Congestive heart failure • Coronary heart disease • Acute coronary syndromes • Chronic coronary heart disease • Heart disease in pregnancy 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
2. Obtain an accurate and complete cardiac history and perform a thorough but directed cardiac examination for patients being evaluated for a wide variety of cardiovascular diseases.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Develop a differential diagnosis and a plan of care for common acute and chronic cardiovascular disease states, using information available from history, physical exam, and test results.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation	PGY4

		Indirect Supervision	
4. Identify life threatening cardiovascular conditions and emergencies and to be able to initiate prompt therapy.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
5. Develop a working knowledge of the risk/benefit assessment that must take place prior to performing an invasive cardiac procedure.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
6. Participate in the performance of invasive procedures only under the direct supervision of an attending cardiologist.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
7. Apply evidence-based medicine to develop comprehensive acute and chronic management plans for the full spectrum of cardiovascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
8. Skillfully select and interpret the most appropriate cardiac tests for individual patients and to expertly apply the results leading to the safest and most optimal care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6
9. Manage all cardiac patients expertly and should be able to function independently as a consultant cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation	PGY6

		Indirect Supervision	
10. Appropriately interpret and apply all data to enhance patient care.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. ***Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.***

Reporting Milestones:

MK1 – Cardiovascular Testing

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate knowledge of the following content areas: Basic science, including: <ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular metabolism • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology • Genetic causes of cardiovascular disease • Molecular biology of the cardiovascular system Primary and secondary prevention of cardiovascular disease, including: <ul style="list-style-type: none"> • Biostatistics • Clinical epidemiology • Current and emerging risk factors; and cerebrovascular disease Evaluation and management of patients: <ul style="list-style-type: none"> • Adult congenital heart disease • Cardiac trauma 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6

<p>2. Demonstrate the critical knowledge base that will permit them to function as a competent well-rounded cardiologists in the following areas:</p> <ul style="list-style-type: none"> • Coronary artery disease • Myocardial diseases • Heart failure • Congenital heart disease • Valvular heart disease • Peripheral vascular disease • Diseases of the aorta • Cardiovascular prevention • Hypertension • Pericardial diseases • Cardiac dysrhythmias • Clinical electrophysiology • Cardiothoracic surgery • Pulmonary hypertension 	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>3. Demonstrate a knowledge of indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests/procedures</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4 PGY6</p>
<p>4. Identify the proper role of various invasive and non-invasive cardiac procedures and tests.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>5. Recite the basic literature related to cardiovascular testing and procedures.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>6. Identify the indications, contraindications, and potential complications related to each major cardiovascular procedure.</p>	<p>Didactic Board Review Bedside Teaching</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation</p>	<p>PGY4</p>

	Clinical Teaching Rounds Role Modeling Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
7. Develop a reading program that will build the foundation of basic cardiology knowledge necessary to become a competent clinical cardiologist.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
8. Review the cardiovascular literature and to correctly apply the literature in their clinical practice.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
9. Critically review and be well-versed in all aspects of cardiology literature and apply it in an evidenced-based manner to the care of patients.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
10. Teach medical students, residents, and junior cardiology fellows on clinical services, laboratory and non-laboratory setting and actively participate in conferences.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBLI1 - Evidence-Based and Informed Practice

PBLI2 - Reflective Practice and Commitment to Personal Growth PBLI3 - Professional Behavior and Ethical Principles			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Set learning and improvement goals	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
2. Identify and perform appropriate learning activities	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
3. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
4. Incorporate formative evaluation feedback into daily practice	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
5. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
6. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation	PGY4 PGY6

		Indirect Supervision	
7. Participate in the education of patients, families, students, fellows and other health professionals	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
8. Obtain procedure-specific informed consent by competently educating patients about rationale, technique, and complications of procedures.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6

Interpersonal and Communication Skills

Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Reporting Milestones:

ICS1 - Patient and Family-Centered Communication

ICS2 - Interprofessional and Team Communication

ICS3 - Communication within Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
2. Communicate effectively with physicians, other health professionals, and health related agencies.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6

3. Work effectively as a member or leader of a health care team or other professional group.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
4. Act in a consultative role to other physicians and health professionals.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
5. Maintain comprehensive, timely, and legible medical records.	Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
6. Contribute to patient management discussion on round in conjunction with the staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
6. Properly document procedure findings and document a thorough and accurate report on any procedure performed.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
7. Write complete, accurate, and informative consults as well as detailed and accurate procedure reports.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Professionalism

Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Reporting Milestones:

PROF1 - Accountability

PROF2 - Self-Awareness and Well-Being

Objectives:

Fellows are expected to:

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate compassion, integrity, and respect for others	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
2. Demonstrate responsiveness to patient needs that supersedes self-interest	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
3. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
4. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
5. Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.	Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6

6. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
7. Function as team leader for the clinical cardiovascular services under the direction of the assigned staff physician.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:

SBP1 - Patient Safety and Quality Improvement

SBP2 - System Navigation for Patient-Centered Care

SBP3 - Physician Role in Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching	End of Rotation Evaluation 360 Degree Evaluation	PGY4 PGY6

	Clinical Teaching Rounds Role Modeling Independent Learning	Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
4. Advocate for quality patient care and optimal patient care systems.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6
6. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY6

Vascular and Peripheral Curriculum Cardiology Fellowship Program Riverside Medical Center

Description: The fellow will learn the non-invasive evaluation of peripheral arterial disease. This includes carotid artery disease, aortic disease, visceral arterial disease, upper and lower extremity arterial and venous disease, and both the medical and interventional treatments available for the various diseases.

In addition, it is recommended that the first year fellow have an intensive 2 week experience learning the basics of heart failure diagnosis and management including both HFrEF and HFpEF.

For those fellows who wish to pursue certification and additional training in vascular medicine, more intensive exposure during the third year rotation is recommended.

Recommended rotations: 2 months

Specifics:

- 1) The fellow will review vascular studies on a daily basis which are available online. Indications for the study and correlation with invasive studies, if available, should be pursued.
- 2) The fellow and attending will meet 3-5 times per week to review the studies and to prepare reports, if applicable. The attending will discuss possible further management of the patient based on the results of the studies being reviewed.
- 3) The fellow will attend monthly peripheral conference.
- 4) The first year vascular fellow, under the guidance of the attending, should spend 2 weeks focusing on heart failure diagnosis and management, including pathophysiology and mechanisms of action of the available treatments. The fellow and attending should meet 3-5 times weekly with recommendations for reading and further study per the attending. If appropriate, one of the CHF nurses can contribute to the learning sessions and the fellow may attend CHF clinic.
- 5) The vascular month also affords the fellow opportunity to pursue research including case reports, QI projects, and broader research projects.

Suggested reading:

Peripheral Artery Disease Mohler and Jaff; **Vascular Medicine: A Companion to Braunwalds' Heart Disease**; **Guidelines for Non-Invasive Vascular Testing: A report from the American Society of Echocardiography and Society of Vascular Medicine and Biology**, **Vascular Disease Diagnostic and Therapeutic Approaches**

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. ***Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.***

Reporting Milestones:			
PC2 – Non-Invasive Testing			
Objectives <i>Follows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate competence in prevention, evaluation and management of the following: <ul style="list-style-type: none"> • Diseases of the aorta • Hypertension • Lipid disorders and metabolic syndrome • Peripheral vascular disease • Thromboembolic disorder 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
2. Identify life threatening peripheral vascular conditions and emergencies and to be able to initiate prompt therapy.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Develop a working knowledge of the risk/benefit assessment that must take place prior to performing an invasive peripheral vascular procedure.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
4. Master the development of acute and chronic management plans for patients with peripheral vascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
5. Apply evidence-based medicine to develop comprehensive acute and chronic management plans for the full spectrum of peripheral vascular diseases.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY6

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. ***Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.***

Reporting Milestones:

MK2 – Critical Thinking for Diagnosis and Therapy

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
<p>1. Demonstrate knowledge of the following content areas: Select all the apply:</p> <p style="padding-left: 20px;">Basic science, including:</p> <ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular metabolism • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology • Genetic causes of cardiovascular disease • Molecular biology of the cardiovascular system <p style="padding-left: 20px;">Primary and secondary prevention of cardiovascular disease, including:</p> <ul style="list-style-type: none"> • Clinical epidemiology • Current and emerging risk factors; and cerebrovascular disease <p style="padding-left: 20px;">Evaluation and management of patients:</p> <ul style="list-style-type: none"> • Geriatric cardiology 	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	PGY4
<p>2. Demonstrate the critical knowledge base that will permit them to function as a competent well-rounded cardiologists in the following areas:</p> <ul style="list-style-type: none"> • Coronary artery disease • Myocardial diseases • Heart failure • Congenital heart disease • Valvular heart disease • Peripheral vascular disease • Diseases of the aorta • Cardiovascular prevention • Hypertension 	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	PGY4

<ul style="list-style-type: none"> • Pericardial diseases • Cardiac dysrhythmias • Clinical electrophysiology • Cardiothoracic surgery • Pulmonary hypertension 			
<p>3. Demonstrate knowledge of the scientific method of problem solving and evidence-based decision making</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>4. Demonstrate a knowledge of indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests/procedures</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>5. Identify the proper role of various invasive and non-invasive cardiac procedures and tests.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>6. Develop a reading program that will build the foundation of basic cardiology knowledge necessary to become a competent clinical cardiologist.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY4</p>
<p>7. Recite the basic literature related to cardiovascular testing and procedures.</p>	<p>Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation</p>	<p>PGY4</p>

		Indirect Supervision	
--	--	----------------------	--

Practice-based Learning and Improvement
--

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

- PBL1 - Evidence-Based and Informed Practice
- PBL2 - Reflective Practice and Commitment to Personal Growth
- PBL3 - Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Set learning and improvement goals	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
2. Identify and perform appropriate learning activities	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
4. Incorporate formative evaluation feedback into daily practice	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4

5. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
6. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
7. Participate in the education of patients, families, students, fellows and other health professionals	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
8. Obtain procedure-specific informed consent by competently educating patients about rationale, technique, and complications of procedures.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4

Interpersonal and Communication Skills

Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Reporting Milestones:

ICS1 - Patient and Family-Centered Communication

ICS2 - Interprofessional and Team Communication

ICS3 - Communication within Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY4

	Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
2. Communicate effectively with physicians, other health professionals, and health related agencies.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Act in a consultative role to other physicians and health professionals.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
4. Maintain comprehensive, timely, and legible medical records.	Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
5. Properly document procedure findings and document a thorough and accurate report on any procedure performed.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4

Professionalism

Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Reporting Milestones:

PROF1 - Accountability

PROF2 - Self-Awareness and Well-Being

Objectives:

Fellows are expected to:

Objectives:	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate compassion, integrity, and respect for others	Bedside Teaching	End of Rotation Evaluation	PGY4

	Clinical Teaching Rounds Role Modeling	360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
2. Demonstrate responsiveness to patient needs that supersedes self-interest	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
4. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
5. Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.	Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
6. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:

SBP1 - Patient Safety and Quality Improvement

SBP2 - System Navigation for Patient-Centered Care

SBP3 - Physician Role in Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
4. Advocate for quality patient care and optimal patient care systems.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
6. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching	End of Rotation Evaluation	PGY4

	Clinical Teaching Rounds Role Modeling Independent Learning	360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
--	---	---	--

CHF/Transplant Curriculum

Cardiology Fellowship Program

Riverside Medical Center

This rotation will be performed at the University of Chicago Medical Center under the supervision of Dr. Gene Kim. Portions of the curriculum for this rotation were provided by UCMC.

Description:

The fellow will develop an understanding of the initial evaluation and diagnosis of heart failure, optimal medical treatments for heart failure, and knowledge of current theories regarding the development and progression of chronic heart failure. By working with the cardiovascular surgeons, the fellow will gain knowledge of the surgical therapies for heart failure including coronary revascularization, valve surgery, ventricular remodeling, and mechanical ventricular assist device therapies. The fellow will gain experience with ventricular assist devices used as a bridge to transplant or destination therapy for advanced chronic heart failure. Fellows are taught the indications for cardiac transplantation, the patient evaluation process, physiology of the allograft, and the basic concepts of cardiac transplant management. After completing this rotation, fellows should be able to identify potential candidates, understand the evaluation and listing process, know the benefits and complications of transplantation and provide initial management of cardiac transplant patients as encountered in general cardiology practice. Specialized training in transplant cardiology is not provided in these general rotations; however, the general fellowship experience does allow the trainee to evaluate Heart Failure and Transplant as potential careers.

Teaching Methods/Clinical Encounters:

1. There is a prescribed reading list of salient papers on topics in both heart failure and transplantation. Fellows are provided with a syllabus during the rotation. This reading list is supplemented from periodically with current topics and fellows are expected to research topics independently.
2. There are formal lectures and discussions that take place during the rotation on selected topics in both heart failure and transplantation. These Didactics sessions provide an opportunity to discuss relevant topics on an in-depth basis.
3. The heart failure and transplant attendings provide core lectures. These formal lectures cover the topics of cardiogenic shock, management of chronic heart failure, evaluation, indications and outcomes of cardiac transplantation, and mechanical assist device therapies. Also included is instruction on the use and interpretation of cardiopulmonary exercise testing.
4. Fellows participate in the weekly heart failure meetings (heart biopsy review sessions, clinical case conferences, Journal Club, VAD meetings, and Transplant MDM meetings) and biweekly pathology conferences attended by surgical pathology attendings
5. Intensive one-on-one instruction occurs during catheterization procedures. In addition to developing the procedural skills of the fellow, the interpretation of hemodynamics at rest and with drug testing is strongly emphasized.

Resources:

Fellows have access to a wide variety of current textbooks in heart failure and transplantation via the fellow's library or Heart Failure Staff. Additionally a syllabus of selected articles relevant to the field of heart failure and transplantation is provided to each trainee in either paper or electronic form. Topics range from classic references/studies to noteworthy contemporary works. Electronic versions of the lectures are archived in the common cardiology drive, to which all fellows have access. This syllabus is updated periodically.

Scholarly Activity:

Fellows are encouraged to review and research the literature as it pertains to questions that arise during the rotation. Visiting rotators are expected to present at least one Journal Club article during the Heart Failure Journal Club during their rotation. The topic is of their choosing, but must be relevant to Heart Failure.

Location: University of Chicago Medical Center

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. ***Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.***

Reporting Milestones:

PC4 – Chronic Care for Cardiovascular Conditions

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
<p>1. Interact with patients and family members in a compassionate, appropriate and effective manner. Frequent topics include: advanced directives regarding resuscitation, implantation or deactivation of implanted defibrillators or ventricular assist devices, and palliative/hospice care.</p>	<p>Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation Direct Observation Indirect Supervision</p>	PGY5
<p>2. Demonstrate competence in prevention, evaluation and management of the following:</p> <ul style="list-style-type: none"> • Arrhythmias • Acute myocardial infarction and other acute ischemic syndromes • Cardiomyopathy • Congestive heart failure • Coronary heart disease • Acute coronary syndromes • Chronic coronary heart disease • Diseases of the aorta • Heart disease in pregnancy • Hypertension • Need for end-of life (palliative) care • Pericardial disease • Pulmonary hypertension • Thromboembolic disorders • Valvular heart disease 	<p>Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation Direct Observation Indirect Supervision</p>	PGY5

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. ***Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.***

Reporting Milestones:

MK2 – Critical Thinking for Diagnosis and Therapy

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
<p>1. Develop a differential diagnosis of heart failure in appropriate situations, demonstrate knowledge of the optimal medical management of chronic heart failure, and be able to utilize diagnostic modalities to diagnosis and treat acute and chronic heart failure.</p>	<p>Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>2. Demonstrate knowledge of the following content areas: Select all the apply:</p> <p>Basic science, including:</p> <ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular metabolism • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology • Genetic causes of cardiovascular disease • Molecular biology of the cardiovascular system <p>Primary and secondary prevention of cardiovascular disease, including:</p> <ul style="list-style-type: none"> • Biostatistics • Clinical epidemiology • Cardiac rehabilitation • Current and emerging risk factors; and cerebrovascular disease <p>Evaluation and management of patients:</p> <ul style="list-style-type: none"> • Adult congenital heart disease • Cardiac tumors cerebrovascular disease • Geriatric cardiology 	<p>Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation Direct Observation Indirect Supervision</p>	<p>PGY5</p>

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBLI1 - Evidence-Based and Informed Practice

PBLI2 - Reflective Practice and Commitment to Personal Growth

PBLI3 - Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate the ability to investigate and evaluate their care of patients	Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation Direct Observation Indirect Supervision	PGY5
2. Demonstrate the ability to appraise and assimilate scientific evidence as it pertains to the care of their patients.	Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation Direct Observation Indirect Supervision	PGY5
3. Research relevant topics that arise during the care of patients during their rotation.	Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation Direct Observation Indirect Supervision	PGY5
4. Obtain procedure-specific informed consent by competently educating patients about rationale, technique, and complications of procedures.	Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation Direct Observation Indirect Supervision	PGY5

Interpersonal and Communication Skills

<p>Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.</p> <p>Reporting Milestones:</p> <p>ICS1 - Patient and Family-Centered Communication ICS2 - Interprofessional and Team Communication ICS3 - Communication within Health Care System</p>			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate the ability to effectively communicate impressions and plans with other physicians, interpret findings and explain management plans to patients and family members.	Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation Direct Observation Indirect Supervision	PGY5

Professionalism			
<p>Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.</p> <p>Reporting Milestones:</p> <p>PROF1 - Accountability PROF2 - Self-Awareness and Well-Being</p>			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Adhere to ethical principals and display sensitivity to a diverse patient population.	Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation Direct Observation Indirect Supervision	PGY5

System-Based Practice			
<p>Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.</p> <p>Reporting Milestones:</p> <p>SBP1- Works effectively within an interprofessional team (e.g., with peers consultants, nursing, ancillary professionals, and other support personnel).</p>			

SBP2- Recognizes system error and advocates for system improvement. SBP3- Identifies forces that impact the cost of health care, and advocates for and practices cost-effective care. SBP4- Transitions patients effectively within and across health delivery systems.			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Apply resources effectively in the diagnosis and management of these patients and to balance the risk-benefit of various diagnostic and therapeutic strategies.	Didactics Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation Direct Observation Indirect Supervision	PGY5

Procedures

Goal: Fellows must be able to competently perform all medical diagnostic, and surgical procedures considered essential for the area of practice.

Trainees during their heart failure and transplant service rotation assist in the cardiac catheterization laboratory learning the following procedures:

1. Vascular access from various anatomic approaches.
2. Right heart catheterization from various anatomic approaches.
3. Hemodynamic analysis of advance HF patients including hemodynamic optimization of LVADs
4. Detection of intracardiac shunts.
5. Left heart catheterization.
6. Placement and management of intraaortic balloon pumps.
7. Right ventricular endomyocardial biopsy from various approaches.
8. Drug testing for the evaluation and treatment primary and secondary pulmonary hypertension

Part of developing proficiency with procedures is learning the indications, risks, and complications associated with them. Fellows take part in the process of explaining procedures to the patient and obtaining informed consent as well as reviewing the results with patients and family members.

Patient Characteristics/Disease Mix

The Center for Heart Failure Management provides service to over 750 active heart failure patients. The cardiac transplant service performs 30 transplants per year and follows nearly 200 transplant recipients.

The patient population encountered trainees during the heart failure and transplant service rotation includes: tertiary referral patients from cardiology practices in our region and from within our institution, referrals from other physicians at the University of Chicago, and the local neighborhood population of fixed-income, economically disadvantaged patients of our community on the south side of Chicago.

Diseases encountered with regularity by fellows rotating through the heart failure and transplant service include:

1. Left ventricular systolic dysfunction from coronary artery disease, hypertensive heart disease, primary and secondary cardiomyopathies, myocarditis, infiltrating myocardial diseases, endocrinopathies, and valvular heart disease.
2. Heart failure with complex arrhythmias
3. Left ventricular diastolic dysfunction
4. Right ventricular dysfunction secondary to chronic lung disease; right ventricular dysplasia and congenital heart disease.

5. Cardiogenic shock post MI/cardiectomy
6. Patients with ventricular assist devices.

Skills

The Out-Patient Experience

Care in the outpatient setting is rendered through the Heart Failure and Transplant Clinic. In this setting, trainees interview, examine, and evaluate new patients referred to the Heart Failure Center as well as established patients. Included in this clinic are patients referred for cardiac transplantation evaluation and post heart transplantation care. This care takes place under the direct supervision of an attending physician. A close interaction permits a free and fluid exchange of ideas, information, and experience. During the rotation trainees may devote one-half day to the Heart Failure/Transplant Clinic in addition to their

Continuity Clinic. During this time, they will see approximately four to six patients including several new visits. The trainee is encouraged to integrate the medical problems identified in these visits with the individual patient's unique barriers to, successful treatment such as poverty, educational barriers, and cultural perspectives.

The In-Patient Experience

During the heart failure and transplant service rotation, the fellowship trainee assumes the responsibility for following the care of patients admitted to the heart failure and transplant service as well as providing consultation services to the general Cardiology service as well as other medicine and surgical services. This in-patient rotation includes post cardiac surgery patients with perioperative heart failure and post-cardiac transplant patients. Primary medical management including immunosuppression is the responsibility of the transplant cardiologist from the first preoperative day. Consequently, the Cardiology fellow has an opportunity to interact closely with both medical and surgical members of the transplant team. Additionally, the heart failure service follows all cardiac surgery patients receiving ventricular assist devices and, thus, the trainee learns the indications, operation and management of various ventricular assist devices including experimental devices. During the in-patient part of the rotation, an attending cardiologist directly supervises the trainee. Bedside rounds are conducted daily with the Cardiology attending, Cardiology fellows, a transplant pharmacist, social worker, and transplant coordinator. During this rotation, the fellow has the opportunity to interact directly with not only the patients but also family members, and provides an important additional source of information regarding the progress of these patients to family members.

Faculty Supervision/Chain of Command

Inpatient/Outpatient Clinical Services

Fellows are directly supervised during the HF/TX rotation by the attending cardiologist on service or in the clinic. In both the inpatient and outpatient settings patients are first interviewed and examined by the trainee who then formulates and proposes a clinical plan. Next, the fellow and attending see the patient together. The attending performs his or her history and physical examination and reviews it with the fellow. Plans are then formulated and acted upon.

Catheterization Lab/Procedures

Trainees gain experience and develop proficiency with procedures and invasive hemodynamic testing in the catheterization laboratory. There is direct supervision by the attending of record at all times, either scrubbed and at the trainees side, or by observation in the control room (for fellows with more experience and proficiency—usually late 2nd or 3rd year fellows). The attending and trainee review the data together so that the trainee will learn how such information is to be interpreted and incorporated into the patient's plan of care.

Although the fellow is directly supervised by the Heart Failure Attending on service or in the catheterization laboratory, any difficulty or conflict encountered by the fellow during the rotation may be addressed by the Heart Failure Director in conjunction with the Fellowship Director if necessary.

CT/MRI Curriculum Cardiology Fellowship Program Riverside Medical Center

This rotation will be performed at the University of Chicago Medical Center under the supervision of Dr. Amit Patel. Portions of the curriculum for this rotation were provided by UCMC.

Description:

The rotation will be a one-month rotation dedicated to learning the techniques, protocols, and technical considerations for performing cardiac CT and MR imaging, as well as developing core competency in cardiac CT and MR image interpretation and anatomy. The fellow's daily activities will include (i) observing patient and equipment preparation for various imaging protocols, (ii) attending all imaging-related conferences and lectures, (iii) attending all CT and MR image reading sessions and actively contributing to these sessions, and (iv) presenting journal articles and/or interesting cases as needed. The work day will be 8:00 am to 5:00 pm. The fellow will attend the weekly University of Chicago imaging conference on Wednesdays at 12:00 noon, and will make every effort to continue to attend the AIMMC Wednesday afternoon conferences.

Location: University of Chicago Medical Center

Patient Care

Goal: Fellows must demonstrate the ability to effectively treat patients, provide medical care, patient empathy, awareness of behavioral issues, the incorporation of preventative medicine, and health promotion. ***Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.***

Reporting Milestones:

PC2 – Non-Invasive Cardiovascular Testing

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate competence in prevention, evaluation and management of the following: <ul style="list-style-type: none"> • Arrhythmias • Acute myocardial infarction and other acute ischemic syndromes • Cardiomyopathy • Cardiovascular evaluation of patients undergoing non-cardiac surgery • Congestive heart failure • Coronary heart disease • Acute coronary syndromes 	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

<ul style="list-style-type: none"> • Chronic coronary heart disease • Diseases of the aorta • Lipid disorders and metabolic syndrome • Peripheral vascular disease • Pericardial disease • Pulmonary hypertension • Valvular heart disease 			
2. Demonstrate knowledge and understanding of different CT and MR imaging protocols, including clinical indications and contraindications for broad range of scans.	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
3. Demonstrate COCATS Level I competency in interpreting CT and MR imaging, as well as the ability to generate a differential diagnosis based on imaging findings.	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. ***Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.***

Reporting Milestones:

MK1 – Cardiovascular Testing

Objectives	Teaching Method	Evaluation Method	PGY Level
Fellows are expected to: 1. Demonstrate knowledge of the following content areas: Select all the apply: Basic science, including:	Didactics Board Review Bedside Teaching	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY5

<ul style="list-style-type: none"> • Cardiovascular anatomy • Cardiovascular metabolism • Cardiovascular pathology • Cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular function • Cardiovascular physiology • Genetic causes of cardiovascular disease • Molecular biology of the cardiovascular system <p>Primary and secondary prevention of cardiovascular disease, including:</p> <ul style="list-style-type: none"> • Biostatistics • Clinical epidemiology • Current and emerging risk factors; and cerebrovascular disease <p>Evaluation and management of patients:</p> <ul style="list-style-type: none"> • Adult congenital heart disease • Cardiac trauma • Cardiac tumors cerebrovascular disease 	<p>Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	
<p>2. Demonstrate a core understanding of the physics underlying CT and MR imaging.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>3. Demonstrate a core understanding of the physics underlying CT and MR imaging.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>
<p>4. Demonstrate understanding of the technical capabilities and limitations, and various relative strengths and weaknesses of CT versus MR imaging for difference clinical conditions and scenarios.</p>	<p>Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning</p>	<p>End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision</p>	<p>PGY5</p>

5. Demonstrate and advanced understanding of cardiac anatomy, including variant anatomy found in congenital cardiac disease.	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
6. Demonstrate a knowledge of indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests/procedures	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBL1 - Evidence-Based and Informed Practice

PBL2 - Reflective Practice and Commitment to Personal Growth

PBL3 - Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Set learning and improvement goals	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
2. Identify and perform appropriate learning activities	Board Review Bedside Teaching Clinical Teaching Rounds	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY5

	Role Modeling Independent Learning	Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
3. Systematically analyze practice, using quality improvement methods, and implement changes with the goal of practice improvement.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
4. Incorporate formative evaluation feedback into daily practice	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
5. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
6. Participate in the education of patients, families, students, fellows and other health professionals	Didactics Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
7. Obtain procedure-specific informed consent by competently educating patients about rationale, technique, and complications of procedures.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

Interpersonal and Communication Skills

Goal: Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Reporting Milestones:			
ICS1 - Patient and Family-Centered Communication ICS2 - Interprofessional and Team Communication ICS3 - Communication within Health Care System			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Communicate effectively with physicians, other health professionals, and health related agencies.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
2. Work effectively as a member or leader of a health care team or other professional group.	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

Professionalism			
Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.			
Reporting Milestones:			
PROF1 - Accountability PROF2 - Self-Awareness and Well-Being			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate compassion, integrity, and respect for others	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
2. Demonstrate responsiveness to patient needs that supersedes self-interest	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation	PGY5

		Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	
3. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
4. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
5. Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.	Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
6. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:

SBP1 - Patient Safety and Quality Improvement

SBP2 - System Navigation for Patient-Centered Care

SBP3 - Physician Role in Health Care System

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
4. Advocate for quality patient care and optimal patient care systems.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
5. Work in interprofessional teams to enhance patient safety and improve patient care quality.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation	PGY5

		In-Training Exam Direct Observation Indirect Supervision	
6. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

Research Curriculum Cardiology Fellowship Program Riverside Medical Center

Description: Research is encouraged throughout the entire 3-year fellowship and required for completion of the program. The fellow is encouraged to participate in any active ongoing research projects with which the Cardiology Division or affiliated sites are involved. An entire month block of time is also set aside to allow the fellow to complete a selected research project. Additional requirements for the research project can be found in the “GME Research Requirements and Procedures” policy.

Cardiology Attending Responsibilities: Monitor progress of research.

Cardiology Fellow Responsibilities: Update overseeing attending on research progress. Setup meeting with the Research Coordinator to discuss types of studies and areas of research interest. Prepare a research project that fulfills the institutional and ACGME standards. During this rotation, fellows are expected to continue to attend all regularly scheduled didactics and clinic days.

During their training, although not necessarily during this rotation, fellows will receive a lecture on “Biostatistics” and “How to write a research paper.”

Medical Knowledge

Goal: Fellows are expected to demonstrate and apply knowledge of accepted standards of clinical cardiology, remain current with new developments in cardiology, and participate in life-long learning activities, including research and review of the literature. ***Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to the care of patients with cardiovascular diseases.***

Reporting Milestones:

MK1 – Cardiovascular Testing

MK2 – Critical Thinking for Diagnosis and Therapy

Objectives <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Recite the basic literature related to cardiovascular testing and procedures.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation	PGY4

		Indirect Supervision	
2. Recognize the significance of keeping current with the literature in order to be able to adapt their clinical practice as new advances are made.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4
3. Demonstrate an understanding of the pathophysiologic basics of common cardiovascular diseases and use this knowledge to help guide clinical management decisions	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5
4. Critically review and be well-versed in all aspects of cardiology literature and apply it in an evidenced-based manner to the care of patients.	Didactic Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

Practice-based Learning and Improvement

Goal: Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self- evaluation and life-long learning.

Reporting Milestones:

PBL1 - Evidence-Based and Informed Practice

PBL2 - Reflective Practice and Commitment to Personal Growth

PBL3 - Professional Behavior and Ethical Principles

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Use information technology to optimize learning	Board Review Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning Computer Module	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation	PGY4 PGY5 PGY6

		Indirect Supervision	
--	--	----------------------	--

Professionalism

Goal: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Reporting Milestones:

PROF1 - Accountability

PROF2 - Self-Awareness and Well-Being

Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Demonstrate respect for patient privacy and autonomy.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Demonstrate accountability to patients, society and the profession.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Demonstrate high standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interest.	Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6

System-Based Practice

Goal: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Reporting Milestones:

SBP1 - Patient Safety and Quality Improvement SBP2 - System Navigation for Patient-Centered Care SBP3 - Physician Role in Health Care System			
Objectives: <i>Fellows are expected to:</i>	Teaching Method	Evaluation Method	PGY Level
1. Work effectively in various health care delivery setting and systems relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
2. Coordinate patient care within the health care system relevant to their clinical specialty.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population- based care as appropriate.	Didactic Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
4. Participate in identifying system errors and implementing potential systems solutions.	Bedside Teaching Clinical Teaching Rounds Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY4 PGY5 PGY6
7. Formulate a meaningful research experience in conjunction with an appropriate mentor	Didactic Role Modeling Independent Learning	End of Rotation Evaluation 360 Degree Evaluation Ambulatory Clinic Evaluation Annual PD Evaluation In-Training Exam Direct Observation Indirect Supervision	PGY5

Procedures

Goal: Fellows must be able to competently perform all medical diagnostic, and surgical procedures considered essential for the area of practice.

Fellows must meet the ACGME required procedure numbers and demonstrate competence in the performance of the following procedures:

- Direct current cardioversion
- Echocardiography
- Exercise stress testing
- Right and left heart catheterization, including coronary arteriography
- Conscious sedation
- Placement and management of temporary pacemakers, including transvenous and transcutaneous
- Programming and follow-up surveillance of permanent pacemakers and ICDs
- IABP

Fellows must meet the ACGME required procedure numbers and demonstrate competence in the interpretation of the following procedures:

- Ambulatory ECG recordings
- Electrocardiograms
- Nuclear cardiology
- Chest x-rays

Safely perform procedures and interpret the data obtained. These procedures will include:

- Electrocardiograms
- Ambulatory ECG monitoring
- Transthoracic and transesophageal echocardiograms
- Cardiac catheterization (hemodynamic and angiographic studies)
- Exercise and pharmacologic stress testing
- Cardiac CT and MRI
- Electrical and chemical cardioversion
- Temporary pacemaker placement
- Nuclear cardiac imaging

