
Rotational Cardiac Catheterization Guideline

Educational Purpose of the Rotation

The goals of the rotation in the cardiac catheterization laboratory are to fulfill training requirements for general cardiology. Following completion of the three-year training program with the requisite rotations in cardiac catheterization the Sub-specialty resident should be able to perform cardiac catheterization procedures independently. It is not the goal of this rotation to provide the Sub-specialty residents with the training required to perform interventional procedures which requires additional training beyond the three years of this program.

Rotation Attendings

This rotation occurs at both Sparrow Health System, McLaren Greater Lansing and at Borgess Medical Center in Kalamazoo, MI with primary rotation for the Catheterization Lab at Sparrow Health System.

During the first and second years of training the Sub-specialty residents rotate to the catheterization laboratories with the following attendings:

Joel Cohn MD	Christopher D'Haem DO
Nam Cho DO	Milland Karve MD
Carlos Fernandez DO	Gaurav Dhar MD
Dale Leffler DO	Ibrahim Shah MD
Majid Mughal MD	Mohan Madala MD

During the second and third year of training the Sub-specialty residents may rotate to Borgess Medical Center with the following attendings:

Tim Fischell MD	William Campbell MD
Vishal Gupta MD	Robert La Penna MD

This rotation is considered an elective rotation for those individuals seeking a more intense catheterization experience.

Resources

State of the art catheterization laboratories are available in both locations. These include both the traditional cine laboratories as well as the upgraded digital acquisition laboratories. Reviewing facilities, patient areas and family conference rooms are available.

Patients

Patient characteristics include adult patients of both genders, diverse ethnicity and socioeconomic backgrounds. A broad spectrum of patients with ischemic, valvular and congenital heart disease is seen as well as less commonly seen cases which may include cardiac tumors, constrictive physiology and tamponade.

Objectives

During the course of the training program (three years) the Sub-specialty resident will:

1. Gain technical expertise in performing right and left heart catheterization, including selective coronary and bypass angiography, placement of temporary transvenous pacemakers and the insertion and management of intra-aortic balloon pumps.
2. Learn the appropriate indications and contraindications for the performance of cardiac catheterization.
3. Appreciate the role of nurses, x-ray technologists, cardiovascular technologists and the necessary team approach for achieving safe and quality studies. This includes the learning of sterile technique, case set-up, radiation safety and access care.
4. Gain expertise in the interpretation of hemodynamics, assessment of valvular disease, common congenital diseases, as well as assessment of angiographic left ventricular function, and coronary angiographic interpretation. This includes the necessary dictation of a detailed catheterization report.
5. Gain expertise in peri-procedural patient care including the obtaining of appropriate pre- procedure cardiovascular focused history, examination and laboratories. Obtaining informed consent which includes a discussion of the risks and benefits of the intended procedure, the knowledge and role of medications used in the care of the patient both in terms of conscious sedation and in the treatment of acute ischemia or in the treatment of reactions and/or complications of the procedure. In the post-

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procedural care this includes appropriate fluid management, immediate tailoring of medications, care of the access site post procedure, the recognition of and prompt treatment of complications.

6. Learn the integration of cardiac catheterization findings into a patient care plan that appreciates the natural history of the patient's disease process. This includes appropriate indications for medical therapy, interventional therapy and surgical therapy. Given that this particular skill requires a high degree of technical and hand/eye coordination it is expected that individuals will advance in skill levels at different rates. To that end, the following guidelines are intended to address the differences in skill levels relative to the training level of the Sub-specialty resident.

In the first year of sub-specialty training it is expected that the residents will participate in the following:

1. Sterile technique and setup of the catheterization table and related equipment.
2. Peri-procedural patient care.
3. Basic radiation safety.
4. Vascular access in straightforward cases.
5. Advancement of basic Judkins, pig-tail and balloon flotation catheters in uncomplicated cases.
6. Technique of coronary injection.
7. Technique of groin compression.
8. Basic coronary anatomy.

Second year trainees should progress into involvement in the following. It is hoped that by the conclusion of the second year these principles will have been achieved.

1. Independent cannulation of the left and right coronary artery.
2. Simultaneous injection and cine of the coronary arteries and bypass grafts.
3. Calculation of ejection fraction, left ventricular volumes, shunt volumes, valve areas and coronary stenosis.
4. Independent placement of temporary pacemakers.
5. Routine vascular access.
6. Management of access complications.

Progression of skills into the third year of training raises the level of expectation. During and certainly by the end of the third year the Sub-specialty resident is expected to:

1. Obtain all access at the discretion of the attending physician.
2. Independently cannulate the coronaries and bypass grafts.
3. Be familiar with all diagnostic catheters and their utility in different anatomic situations.
4. Feel comfortable in calling for different views to enable visualization of areas of vessel overlap, foreshortening, or in bifurcations.
5. Contribute to discussions at conferences on approaches to therapy and/or diagnostic approaches that might have been helpful.
6. Participate, at the discretion of the attending physician, in portions of the interventional procedure.

Instructional Methods

Attending physicians participating in this rotation will:

1. Supervise and instruct the sub-specialty residents in accordance with the Supervision Policy.
2. Provide an atmosphere allowing for responsible patient care while encouraging sub-specialty residents to assume more primary responsibility as their skills progress.
3. Provide sub-specialty residents with ongoing feedback regarding the progression of skills.
4. Provide structured teaching opportunities including appropriate literature references/citations for review and discussion.

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Evaluation Process

At the conclusion of each rotation:

1. Attending physicians will summarize and accurately describe the sub-specialty resident's performance on the provided evaluation form. The attending physician will review this evaluation with the sub-specialty resident and both will sign their acknowledgment and return the form to the Program Office for review by the Program Director and inclusion in the file.
2. The sub-specialty resident will summarize and accurately describe both the faculty performance as well as the relative value of the rotation on the provided form and return it to the Program Office. In order to insure anonymity, these comments are entered into a database program and the original forms are destroyed.

Readings: As assigned.

Schedule : Please refer to master sub-specialty resident schedule.

Attachments : Contact the Program Coordinator for attachments relevant to the Cath Rotation.

Competency Level : Completion of all Cardiac Catheterization rotations would permit the Sub-Specialty Resident to qualify for Level 2 competency under the COCATS3 Guidelines. A log must be kept for all cardiac catheterization procedures.