

# Mission Statement and Educational Goals

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## Mission Statement

The goal of the fellowship program is for high quality education in cardiovascular medicine. This involves the provision of the basic ingredients of: clinical exposure and strong mentoring with appreciation for research and high ethical standards. Our partnerships with Sparrow Health System, Spectrum Health System, Henry Ford Health System and Borgess Medical Center provide us with a "first line of defense" in the presentation of acute and chronic cardiovascular disease. Continuity care is provided at Michigan State University where each fellow maintains a regularly scheduled outpatient clinic (1/2 day per week).

To insure that fellows are progressing and learning at an adequate level, we have devised the following educational goals for each level of training:

### First year fellows:

Fellows are exposed to the basics of clinical cardiology. This includes an introduction to cardiac catheterization, echocardiography, non-invasive testing and the inpatient clinical service.

In the cardiac catheterization laboratory, the fellow expectations include working with the laboratory staff in learning the functions of the lab including sterile technique, patient preparation and room set up. This initial phase occurs during the first catheterization rotation and is two weeks in duration. Fellows are further expected to take a thorough history and perform a physical examination prior to participate in any case. They will then present the case to the attending physician. The appropriate catheters will be selected for the case and the arterial access site will be determined based upon the patient's vascular disease (i.e. brachial versus femoral artery approach) following discussion between the fellow and the attending. The fellow is responsible for charting a summary of the history and physical findings and the pre-operative orders. By both direct observation and didactic instruction, the fellow will learn to obtain arterial and venous access and position the catheters in the aorta (left heart catheterization) and pulmonary artery (right heart catheterization). Following each case, the fellow will ensure that hemostasis of the arterial access site is secured and write a preliminary report in the chart. The fellow and attending will review the films and hemodynamic tracings together and the fellow will dictate a final report. The vascular access site is reviewed by the fellow and the attending.

At the completion of the first year, the fellow should be competent in performing a complete right heart catheterization independently. This includes obtaining saturation studies for intracardiac shunts, interpretation of basic cardiac hemodynamics, identification of coronary arteries and various cardiac and coronary pathologies. During the latter part of the year the fellow will begin performing selected coronary catheterization and angiography and will be expected to communicate results to the patient, their family and other physicians on the case. It must be noted that first year fellows do not participate in acute cases since these are time critical cases and most commonly involve interventional procedures.

In the non-invasive laboratory the fellow is responsible for reading electrocardiograms on all referral patients. These studies are overread by the attending physician for final report. Acute abnormalities are communicated to the attending physician and/or house staff on the case. Also, in the non-invasive laboratory the first year fellow will learn the principles involved in the administration of exercise testing. This includes a brief history and physical examination, interpretation of a pre-test electrocardiogram, determination of the most appropriate testing protocol and interpretation of abnormalities during the test. The fellow is responsible for monitoring the patient during testing and will learn to recognize the appropriate indications for discontinuation of the test. The fellow is responsible for a preliminary report as well as a final dictated report after discussion with the attending physician. At the conclusion of the first year the fellow should be able to communicate results to the patient, their family and to the referring physicians as necessary.

Early in the first year of training, fellows are assigned to a "hands on" echocardiography rotation. The fellow is expected to learn to recognize echocardiographic patterns including the normal chamber dimensions and flow patterns on continuous flow and pulsed wave Doppler. Fellows are further instructed and tutored in appropriate probe placement and should be competent at performing bedside urgent echocardiogram at the conclusion of this rotation. First year fellows do not participate in transesophageal echocardiography except as observers.

Clinical activities include both the inpatient service and the outpatient continuity clinics. On the inpatient service fellows are expected to provide consultations to both medical and surgical services (including critical care). In that capacity they are expected to perform a history and physical examination and be able to report their impression to the attending cardiologist. Outpatient clinics are held at Michigan State University under the supervision of an attending physician. Fellows are required to attend this clinic ½ per week for the

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duration of the training period. The fellow will perform a thorough cardiovascular history and physical examination and be able to relate this information to the patient's overall medical condition. The case will be presented to the attending cardiologist and management options are discussed. The fellow will then have the opportunity to follow the patient on future visits and be able to monitor the progress of the patient during treatment.

Late in the first year of training fellows may participate in the electrophysiology rotation. A basic understanding of the indications for electrophysiological testing and basic procedures are expected. At this level the fellow will be more involved in the clinical management of these patients than in the electrophysiology laboratory. Understanding the various devices and their recommended follow up is included at this level of training.

### **Second year fellows:**

More independence is emphasized to assume responsibility of patient care. In the cardiac catheterization laboratory the fellow is expected to continue the advancement by becoming adept at performing left heart catheterizations. By the end of the year the fellow should be able to independently perform a complete coronary and left ventricular angiography in an uncomplicated case. Those fellows wishing to perform independent catheterization following training will have completed 6 months of cardiac catheterization laboratory experience.

The second year fellow will also be required to assume an increasing role during exercise testing and the performance and interpretation of the echocardiograms. The fellows are expected to read the studies independently followed by review with the attending cardiologists. This will provide the necessary case load to qualify for competence and build the confidence of the fellow in testing administration and interpretation.

In the electrophysiology laboratory the second year fellow will participate in the insertion and programming of devices as well as have an increasing role in the management of patient's pre and post procedures.

By the end of the second year the fellow is fully engaged in a research project under the mentorship of an attending faculty member. This may include participation in an ongoing project or a novel project developed by the fellow.

### **Third year fellows:**

More independence and more catheterization laboratory or non-invasive time is available depending upon the fellow's area of interest. If the area of specialization is in the catheterization laboratory, arrangements are made for the fellow to participate in additional training both at Sparrow Health System and rotations at Borgess Medical Center. For the fellow interested in non-invasive or echocardiography additional months of rotations are provided to hone their skills in these domains. Throughout this third year continued work in exercise testing, echocardiographic interpretation, outpatient and inpatient clinical care and research is expected. More teaching responsibility for medical residents and/or junior fellows will be part of the educational experience.

We expect this rigorous exposure and training to yield a high qualified cardiologist dedicated to cardiovascular medicine including the core competencies as prescribed by ACGME and high ethical standards.