Program Description
for the Subspecialty Training Program
in Osteopathic Cardiology

2008

Oakwood Southshore Medical Center
Trenton, Michigan  48183

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Revised May 2008
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BACKGROUND

The Oakwood Southshore Medical Center (OSMC) is a 200-bed facility located in Trenton, Michigan, a suburb in the southern part of the standard metropolitan statistical area of Detroit. OSMC is a part of the larger Oakwood Healthcare System (OHS), which includes three other affiliate sites: Oakwood Hospital and Medical Center (OHMC), Oakwood Annapolis Hospital (OAH), and Oakwood Heritage Hospital (OHH). All sites are within the same geographic area, within a 20-mile radius. The largest of the four hospitals, OHMC, has 697 beds and has long been involved in the education of allopathic residents.

The origin of this cardiology fellowship training program is traced to the Riverside Osteopathic Hospital where it began in 1978. At that time, a two year cardiology fellowship training program was developed with Riverside Osteopathic Hospital as the base training facility, and Detroit Osteopathic Hospital as the tertiary institution. The strength of that training program was the well established core curriculum, the organized didactic program, and the concentrated, well coordinated community hospital experience in clinical cardiology. When the Detroit Osteopathic Hospital closed in the early 1990s, the tertiary care experience was shifted first to the Detroit Medical Center, and then to Henry Ford Hospital. In the spring of 2002, the Henry Ford Health System announced that it would be downsizing Riverside Osteopathic Hospital and transferring all osteopathic training programs to a hospital in Wyandotte, Michigan. Many of the osteopathic faculty who were on staff at Riverside also had privileges at Oakwood Southshore Medical Center located about four miles away. Most of the teaching faculty preferred to transfer their practice entirely to Southshore (OSMC) rather than move their practice to Wyandotte. The administration of OHS recognized that this presented a unique opportunity to expand the educational training programs offered within the system. Medical education staff were hired to work with the faculty in developing an internship and primary care residency program at OSMC. Additionally, the corporation committed 25 million dollars to refit and rebuild the institution.

As with many of the other faculty who chose to relocate to OSMC, the physicians involved in the osteopathic cardiology fellowship program have also chosen to re-establish their practice at OSMC. The cardiology fellowship training program at the Riverside Osteopathic Hospital was inspected by the American College of Osteopathic Internists in April 2002. There were no deficiencies. In fact, the program was commended for its excellent didactics and core curricular structure, as well as the outstanding personal involvement and commitment of the Program Director, Felix J. Rogers, D.O. The inspector was made aware at that time of the Fellowship Director’s desire to relocate his practice. Since Dr. Rogers was continued as Fellowship Director and brought with him a model of didactic and core curriculum education that is a model of excellence in the osteopathic profession, this program will be a superior educational...
experience. The American Osteopathic Association committee on post doctoral education approved this cardiology program for the training of six (6) fellows, beginning in July 2004.

Trenton, Michigan is emerging as the focal point of growth in the greater Metropolitan Detroit area. Parallel to the aging of the general, resident population of the area, new subdivisions, apartments, and other housing are under development in the nearby community. In 2003, the patient volume in the emergency room tripled compared to 2001. This represents an increase of 50% more than the volume predicted had the entire emergency room volume of Riverside Hospital been transferred directly to Southshore. The cardiac catheterization volume in 2004 doubled the volume achieved in 2003.

To accommodate this population growth and expansion of clinical services, the Oakwood Healthcare System embarked on an immediate program of renovation, remodeling, and expansion. A training program for interns and residents was established beginning July 2003. With that, a medical library was established with a growing collection of books and journals, and a full range of computers and electronic access to the literature. The hospital has developed affiliations with the Michigan State University of Osteopathic Medicine for post graduate training, including consortium programs for residents. The hospital serves as a base institution for students from the Michigan State University College of Osteopathic Medicine, Kansas City University of Medicine and BioSciences and Touro University College of Osteopathic Medicine. The hospital also provides core rotations for the Lake Erie College of Osteopathic Medicine.

Program Description

Cardiology fellows will be trained to provide an exceptional level of care to prevent heart disease and to treat cardiovascular disease when present. Although this program is designed to provide exposure to research, teaching and academic experiences of the highest caliber, the emphasis is to train physicians in the clinical practice of cardiology.

Cardiology fellows will participate in all aspects of evaluation and treatment of cardiac patients, both within the hospital and in the ambulatory setting, including outpatient departments and the private office of Downriver Cardiology Consultants, P.C. Fellows will be closely supervised and mentored in both care settings.

OSMC is positioned to provide inpatient and outpatient facilities with an appropriate number of patients representing a wide range of cardiovascular disorders. Facilities for echocardiography, nuclear medicine, exercise and pharmacologic stress testing are already in place. The affiliation with OHMC will allow for exposure to procedures and disease processes in one of the top cardiology hospitals in the USA. The open heart surgery program at OHMC is one of the largest and fastest growing such programs in the metropolitan Detroit area. The cardiac catheterization laboratory and interventional cardiology program are state of the art facilities which are nationally recognized. Together, the two facilities have a coordinated approach to the management of acute
coronary syndromes, representing one of the first such developments on a regional basis in the area. Combining the faculty and facilities of both OHMC and OSMC will allow the cardiology fellows to exceed the standards of the American College of Osteopathic Internists for osteopathic cardiology fellowship training.

The first challenge in the development of a cardiology fellowship training program is to provide state of the art facilities, training, and education that meet the needs of patients with cardiovascular disease. An equally important challenge, rarely addressed in cardiology fellowship training programs, is to anticipate the health care needs of the population over the next one or two decades and initiate a clinical program training and skill development to meet those anticipated needs. This goal is addressed by using the Global Burden of Disease, a prediction by the World Health Organization of the impact of disease or injury in the year 2020.

The following figure describes the change in rank order of disease burden for 15 leading causes in the world in 1990 compared to the projection for 2020. Disease burden is measured in disability-adjusted life years.

<table>
<thead>
<tr>
<th>1990 Disease or Injury</th>
<th>2020 Disease or Injury</th>
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<tbody>
<tr>
<td>1. Lower respiratory infections</td>
<td>1. Ischemic heart disease</td>
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<tr>
<td>2. Diarrheal diseases</td>
<td>2. Unipolar major depression</td>
</tr>
<tr>
<td>3. Conditions arising in the perinatal period</td>
<td>3. Road traffic accidents</td>
</tr>
<tr>
<td>4. Unipolar major depression</td>
<td>4. Cerebrovascular disease</td>
</tr>
<tr>
<td>5. Ischemic heart disease</td>
<td>5. Chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>7. Tuberculosis</td>
<td>7. Tuberculosis</td>
</tr>
<tr>
<td>8. Measles</td>
<td>8. War</td>
</tr>
<tr>
<td>9. Road traffic accidents</td>
<td>9. Diarrheal diseases</td>
</tr>
<tr>
<td>10. Congenital anomalies</td>
<td>10. HIV</td>
</tr>
<tr>
<td>11. Malaria</td>
<td>11. Conditions arising in the perinatal period</td>
</tr>
<tr>
<td>15. Protein-energy malnutrition</td>
<td>15. Trachea, bronchus and lung cancers</td>
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</tbody>
</table>

This prediction of the global burden of disease represents the best estimate of conditions in the year 2020. There will clearly be differences between developing countries and the highly developed USA. The cardiology section has chosen to emphasize the cardiovascular aspects of the major disease entities in the year 2020. The decision to adopt this approach means that a cardiology training program, and cardiologists themselves, should not only be skilled in the treatment of these disorders, but also adopt an orientation of prevention. Accordingly, the components of the core curriculum for training in cardiology include opportunities that are otherwise not included in more traditional education training programs. For example, the standard rotation schedule will include expert training in modification of cardiac risk factors, treatment of lipid disorders, and hypertension, since each of these are key elements to the prevention of ischemic heart disease and cerebrovascular disease, ranked 1 and 4 respectively in the year 2020.
One might ask, how do traffic accidents relate to the practice of cardiology? In the developing world, the clear majority of such injury and death occurs in pedestrians, in over-crowded circumstances, with poor road conditions, and inadequate education of participants. In the United States, traffic accidents happen for a variety of reasons including alcohol, excessive speed, mechanical problems, and road conditions. In addition, they occur because of syncope and falling asleep at the wheel. Therefore, the cardiology fellowship program offers elective rotations in the evaluation and management of patients with syncope, including tilt table testing, and an elective in sleep medicine. The syncope and sleep disorders are so common that these disorders are easy to evaluate in a superficial and cursory manner, and it is unusual to see expertise applied in this area.

Likewise, cerebrovascular disease typically occurs because of hypertension, atrial fibrillation, or atherosclerotic disease. Elective opportunities will be provided for cardiology fellows who wish to pursue concentrated training in peripheral vascular disease including diagnostic testing for carotid artery disease and carotid artery intervention including angioplasty and stenting. A rotation with concentration in atrial fibrillation and anticoagulation is a possibility.

Facilities

As this document is in preparation, the hospital is in the midst of a major expansion. A five-story tower is under construction at the south end of the hospital. This will provide a new emergency room, intensive care unit, and surgical suites. The new cardiology catheterization laboratory and radiology section will be interfaced with these units. In addition, a sufficient number of new patient rooms will be built to decompress the present hospital and convert the entire institution into single patient rooms.

In August 2007, the hospital submitted an application to perform primary angioplasty on site for patients with ST segment elevation myocardial infarction. This meant documentation of a cardiac catheterization laboratory volume of at least 400 cases per year. Approval of this request is expected in early 2008. The new hospital facility is scheduled for opening in mid 2008.

Presently, the hospital has a cardiac catheterization laboratory that is part of a multipurpose radiology special procedure's unit. The cardiac catheterization laboratory holding area is in a location where outpatient transesophageal echocardiography and direct current electrocardioversions are performed. Pacemakers are implanted in the catheterization laboratory.

Noninvasive cardiac diagnostic studies are performed in the hospital setting and in the office at Downriver Cardiology Consultants, P.C. These include treadmill exercise stress testing, myocardial perfusion imaging, pharmacologic stress testing using dobutamine and persantine, myocardial viability studies, and echocardiography. More than 300 two-dimensional and color flow oppler echocardiographic studies are performed annually in
addition to approximately 100 transesophageal studies. Electrocardiography and ambulatory ECG monitoring are performed in both settings. Downriver Cardiology Consultants conducts a large pacemaker follow up clinic. Tilt table testing and assessment of autonomic function for the evaluation of syncope was established in May 2005.

Noninvasive peripheral vascular evaluation is also performed in the hospital by the radiology department and in the office of Downriver Cardiology Consultants, P.C. Peripheral vascular intervention in the special procedure/cardiac catheterization laboratory was implemented in August 2005.

Both Downriver Cardiology Consultants and Southshore have a long history of support of cardiac rehabilitation exercise and preventive cardiology. There are extensive programs in wellness and dietary counseling.

Training Opportunities

The field of cardiology is expansive and requires a broad base of knowledge in general internal medicine. In the field of cardiology itself, there are many subspecialty areas. The focus of the cardiology fellowship training program at OSMC will be to provide excellent training in the field of general cardiology. The three year program will be primarily conducted at OSMC, with rotations available through the Oakwood Healthcare Medical Center (e.g. CCU, cardiac catheterization, PTCA, pacing and electrophysiology, and open heart surgery). For those standard and elective rotations for which OHMC does not provide a teaching program, training opportunities are available in the many medical centers in the Detroit area.

The time at OHMC and affiliated institutions will be designed to complement the OSMC training experience. Whereas OSMC is a community hospital with a strong primary care emphasis that serves a relatively homogeneous population, fellows must be exposed to a wider range of patients and conditions which are often only seen in tertiary care centers.

The cardiology fellowship training program will provide an opportunity for fellows to maintain their skills in internal medicine as well as develop specialized training in cardiology. The fellow’s time will be carefully supervised in terms of education program and clinical service. A healthy balance is sought wherein structured educational programs are matched with appropriate scheduled periods in clinical settings. The duration of training and volume of procedures will conform to the basic standards for residency training as defined by both the American College of Osteopathic Internists (ACOI) and the American Osteopathic Association (AOA), along with the ACC core cardiology training symposium guidelines (COCATS).

Faculty

The Program Director at Oakwood Southshore Medical Center is Felix J. Rogers, D.O., who has been director of the cardiology fellowship training program since 1978. He is
board certified by the American College of Osteopathic Internists and a fellow of the American College of Cardiology. He has served as chairman of the Bureau of Research of the American Osteopathic Association, as president of the cardiology section of the American College of Osteopathic Internists, and is the author of the chapter on cardiology in the textbook *Foundations of Osteopathic Medicine*.

The additional faculty members at Southshore include the cardiologists with Downriver Cardiology Consultants. Further, several of the other cardiologists on staff at the hospital maintain a high level of clinical expertise in their practice, and have a sincere commitment to housestaff training and education. They will also serve as trainers for this program. At OHMC, Arthur Riba, M.D., is the fulltime director of the coronary care unit, where he conducts academic teaching rounds on a daily basis. Both osteopathic and allopathic physicians at OHMC pledge participation in the training program. Pacing and electrophysiology services at Oakwood Dearborn are provided by members of the faculty at the University of Michigan Medical Center, and it currently represents an established component of their fellowship training program for general cardiology as well as electrophysiology. Oakwood Hospital and Medical Center is presently at the interview stage of establishing a cardiology fellowship training to begin July 1, 2008.

**CARDIOLOGY FELLOWSHIP CORE COMPETENCY GOALS**

The specialty of Cardiology consists of the prevention, diagnosis and treatment of cardiovascular disorders. The goals of the osteopathic cardiology fellowship program are to achieve mastery of the following core competencies:

1. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**
   
   a. Integrate osteopathic principles into the diagnosis and management of patient clinical presentations.
   
   b. Apply osteopathic manipulative therapy in patient management where applicable.
   
   c. Evaluation methods include a monthly evaluation, MSU on-line modules, OMM lectures.

2. **Medical Knowledge**
   
   a. Demonstrate competency in the understanding and application of clinical medicine to patient care.
      1. Demonstrate through knowledge of the complex differential diagnoses and treatment options of cardiovascular medicine.
      2. Integrate the sciences applicable in cardiovascular medicine with clinical experiences.
   
   b. Understand and apply the foundations of behavioral medicine appropriate to medicine.
1. Demonstrate ability to provide end of life care.
2. Identify and address socioeconomic, ethnic, religious, and cultural aspects of illness and their impact on patient clinical presentation and subsequent management.
   c. Evaluation methods include monthly evaluations, weekly cardiology conferences.

3. Patient Care
   a. Demonstrate ability to rapidly evaluate, initiate and provide appropriate treatment for patients who are critically ill.
   b. Demonstrate ability to thoroughly evaluate, initiate treatment and provide appropriate long-term therapeutic recommendations to patients with chronic medical problems in both hospital and ambulatory settings.
   c. Demonstrate ability to make appropriate recommendations to promote health maintenance and disease prevention.
   d. Demonstrate ability to gather appropriate essential medical information from patient interview, relevant medical records, examination and testing.
   e. Evaluation methods include monthly evaluations, peer review, health stream courses (environment of care, culture of safety, infection prevention and control).

4. Interpersonal and Communication Skills
   a. Exercise effective patient interview skills.
   b. Demonstrate appropriate verbal communication with clarity, sensitivity, and respect.
   c. Create well-organized, clear, succinct but thorough and legible medical record entries.
   d. Demonstrate the ability to interact with support staff in hospital and ambulatory settings in a constructive, positive and effective manner.
   e. Identify methods to communicate with non-English speaking patients, and with those having sensory deficits (verbal, visual, and auditory).
   f. Evaluation methods include monthly evaluations, journal club presentations, tumor board presentations, and health stream courses (diversity, cultural competent care).

5. Professionalism
   a. Identify the role of cardiovascular medicine as it related to other medical disciplines.
   b. Develop the principles of appropriate ethical conduct and integrity in dealing with patients and the medical community.
      1. Identify potential areas of conflict of interest inherent in medical practices.
2. Demonstrate appropriate, judicious and efficient utilization of medical therapies, procedures, and testing without consideration of personal gain.
3. Demonstrate understanding of the implicit position of trust and authority into which patients often place their physician; recognize the ethical requirement to avoid exploitation of this trust either intentionally or unintentionally.

c. Complete training in personal health information protection policies, and recognize their application in daily medical practice.
d. Recognize the elements of religion, race, ethnicity, or cultural background in individual patients, and address them properly.
e. Recognize the need for continuous quality care in all patient populations, and demonstrate lack of discrimination.
f. Provide medical care to those seeking it.
g. Evaluation methods include monthly evaluations, health stream courses (HIPPA and corporate compliance).

6. Practice-based Learning and Improvement

a. Develop professional leadership and practice management skills.
b. Evaluate the progress of the training of the resident by using continuous assessment tools.
   1. Utilize systematic evaluation to include self-study and assessment, individual trainee assessment, and outcome analysis.
   2. Participate in quality improvement programs and assessment activities in the hospital and ambulatory setting.

c. Expose the fellow to research methodology in cardiology.
d. Identify information technology applicable to the practice of medicine and research. Demonstrate ability to effectively utilize such technology.
e. Develop teaching skills in cardiovascular medicine.
f. Promote the development of the attitude and commitment to habits of lifelong learning and scholarly pursuit in cardiovascular medicine.
g. Prepare the resident to meet the eligibility requirements of the AOA to take the cardiology certification examination administered by the American Osteopathic Board of Internal Medicine.
h. Evaluation methods include monthly evaluations, in-service exams, peer review, journal club and health stream courses (corporate compliance, environment of care).

7. Systems-based Practice

a. Develop in the fellow the skills needed to practice within a system-based health care environment and to use the resources to delivery quality care.
b. Understand the national and local health care delivery systems and how
they impact on patient care and professional practice. Advocate for the
patient in obtaining quality health care in complex systems.
c. Evaluation of methods include monthly evaluations, and health stream
courses (environment of care, national patient safety goals).

**CARDIOLOGY CURRICULUM**

**Clinical Cardiology**

Clinical cardiology must encompass a broad range of cardiac disease states. This
experience must include daily inpatient management of cardiovascular diseases and
cardiology consultation. At least three of these months must be spent by the trainee in the
CCU or ICU during the trainee’s 36-month program. If the trainee has extensive CCU or
ICU experience from his/her IM residency, then this requirement can be met by ongoing
patient interaction in the CCU supervising medical residents over the three-year period.
Either alternative must enable the trainee to gain exposure to hemodynamic monitoring,
postoperative patient care, as well as other aspects of critical/acute care cardiology, i.e.;
myocardial infarction, congestive heart failure, postoperative coronary artery bypass
grafting and transplant.

**Cardiac Catheterization and Interventional Cardiology**

A minimum of 4 months in cardiac catheterization must be spent by the trainee, or
exposure to a minimum of 100 cases. During this time, the trainee must gain exposure to
valvular hemodynamics, right and left cardiac catheterization and limited exposure to
interventional cardiology. The trainee must participate in a minimum of 300 left heart
catherizations as primary operator to achieve Level II proficiency. The trainee must also
maintain a procedure log for accurate documentation. Level II trainees must also perform
at least 10 intraaotic balloon pumps during the 36-month training program.

**Non-Invasive Testing; Exercise Stress Testing, Electrocardiography and Nuclear Cardiology**

The trainee must spend at least 2 months in the exercise testing facility. As an alternative,
this may be incorporated into other rotations, such as heart station or non invasive. The
trainee must be capable of performing and interpreting the electrocardiographic portion
of the treadmill and appropriateness of ordering tests. Minimum interpretations of 150
exercise tests should be performed. Dobutamine and stress echocardiography
requirements are in addition to this. Interpretation of standard 12-lead electrocardiograms
should be incorporated in the entire 36-month training period. In order for the trainee to
become proficient in interpretation and gain exposure to a wide variety of ECG
abnormalities, it is recommended that a minimum of 3, 500 studies be reviewed.
Echocardiography
The trainee must spend a minimum of 4 months in echocardiography lab. As an alternative, this may be incorporated in other rotations such as heart station or noninvasive. During this time, the trainee will gain exposure in performing and interpreting 2D and M Mode echocardiography and cardiac Doppler. A minimum of 300 studies must be interpreted to obtain Level II proficiency in echocardiography.

These studies must include a wide variety of cardiac abnormalities, such as valvular heart disease, endocarditis, prosthetic valve evaluation, myocardial ischemia, primary and secondary diseases of the heart, pericardial disease and diseases of the great vessels.

The trainee must have attained proficiency in standard 2D and M mode echocardiography and cardiac Doppler prior to or parallel with obtaining expertise in transesophageal echocardiography. A minimum of 25 intubations supervised by an experienced transesophageal echocardiographer, as well as performing 50 transesophageal echocardiographs are necessary to achieve proficiency in this area.

The trainee must obtain proficiency in standard echocardiography prior to or parallel with obtaining proficiency in stress echocardiography and dobutamine echocardiography. A minimum of 100 stress/dobutamine echocardiographic studies are recommended for proficiency in this area.

Nuclear Medicine
Individuals wishing certification in nuclear medicine/nuclear cardiology require special training. The Nuclear Regulatory Commission has set specific guidelines for licensure in this field. Please refer to these guidelines.

Electrophysiology
The trainee must have a minimum of 2 months of electrophysiology exposure. During this time, the trainee must gain exposure to the appropriateness of electrophysiological studies, interpretation of basic electrophysiological studies, technique involved, and indication for pharmacological and non-pharmacological management of arrhythmias and indications for temporary and permanent pacemakers.

A minimum of 10 temporary tranvenous pacemakers should be inserted during the 36-month training period, as well as a minimum of eight elective cardioversions in the 36-month period.

Exposure to permanent pacemaker insertion must be available to cardiovascular trainees. A minimum of 50 permanent pacemaker implantations must be performed.

The ability for the trainee to participate in pacemaker follow-up is mandatory for those performing pacemaker implantation. One hundred (100) pacemaker follow-up visits must be performed. The pacemaker clinic must allow the trainee to gain experience in a variety of pacemaker programmers, as well as pacemaker follow up and management.
<table>
<thead>
<tr>
<th>PROCEDURES</th>
<th>REQUIRED NUMBER</th>
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<tbody>
<tr>
<td>Arterial Line Placement</td>
<td>5</td>
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<tr>
<td>Arterial Puncture for Catheterization</td>
<td>50</td>
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<tr>
<td>Central Line Placement-Internal Jugular</td>
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<tr>
<td>Central Line Placement-Subclavian</td>
<td>5</td>
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<tr>
<td>Chest Tube</td>
<td>5</td>
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<tr>
<td>Conscious Sedation</td>
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<td>Direct Current Electrocardioversion</td>
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<tr>
<td>Endotracheal Intubation</td>
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<tr>
<td>Esophageal Intubation for Tee</td>
<td>50</td>
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<tr>
<td>Permanent Pacemaker Placement</td>
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<td>Swan Ganz Placement</td>
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<td>Temporary Tranvenous Pacemaker</td>
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<td>Thoracentesis</td>
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<td>Treadmill Stress Testing/Interpretation</td>
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Duty Hours

The hours of service cannot always be defined. In general the Fellow’s duty hours will be contingent on their service assignment and attending cardiologist. The program will comply with AOA mandated “trainee duty hours policy”.

On Call Schedule

Every third weekend with attending cardiologist; Night call varies with service assignment, e.g., none for echocardiography; every 5-8 days for ICU, etc.