VANDERBILT
School of Medicine

FELLOWSHIP TRAINING PROGRAM
ADULT CARDIOVASCULAR MEDICINE AND RESEARCH
2009-2010

Department of Medicine
Division of Cardiovascular Medicine

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SECTION I
MISSION STATEMENT

Our mission is to train superb Cardiovascular Physicians and Scientists who will become leaders in Cardiovascular Medicine. We do this by devoting our time, talents, and energy to:

- Patient Care
- Research
- Teaching

Our Vision is to create a training program in Cardiovascular Medicine that nurtures the development of Fellows who have the potential to:

- Assume leadership roles in academic medicine
- Provide exemplary patient care
- Contribute to medical knowledge through research
- Continue this tradition of excellence by teaching others

We value in our Faculty and Fellows:

- Clinical excellence
- Scholarship
- Academic achievement
- Dedication
- Integrity
- Service
SECTION II

PROGRAM DESCRIPTION

Adult Cardiovascular Medicine is an increasingly complex and expanding discipline. The training program at Vanderbilt continually evolves to meet current training requirements. Our program is designed to provide training and experience in the evaluation and management of a wide spectrum of patients with acute and chronic cardiac conditions. The mandated clinical experience conforms to the American College of Graduate Medical Education guidelines (www.acgme.org).

All Cardiovascular Medicine Fellows will participate in clinical activities for at least 24 months during the 3-year training period as outlined by the ACGME and ABIM. This allows Fellows to develop appropriate levels of clinical competence in Adult Cardiovascular Medicine to start their careers in academia or in practice. Fellows wishing to pursue clinical (level 2) or basic science research (level 3) require a minimum of two dedicated research-training years (COCATS, www.acc.org). The training program also actively participates in physician-scientist training via the ABIM research pathway and adheres to the guidelines outlined by the ABIM (www.abim.org). The total amount of clinical training will be individually determined to best meet the career goals of Fellows. Outlined in this section are the major hospital and clinic based experiences designed to meet the stated expectations for Fellowship.

The Fellowship Program is based upon a 28-day cycle for all of the clinical rotations comprising the Fellowship Program. Each 28-day block rotation requires Fellows to switch on a staggered cycle from Attendings and Housestaff and we believe this improves the continuity of care provided to our patients. This cycle allows

- An increase in the number of rotations in a calendar year;
- A more equitable distribution of rotations throughout the calendar year;
- More elective-based experiences for Senior Fellows.

Medicine Core Competencies

The Fellowship Director will meet with all Fellows at least twice each year to review evaluations, discuss strengths, remedy weaknesses, and help tailor the training program to best fit individual career goals. A 360 degree evaluation is performed by faculty, peers, residents and medical students, nursing staff and patients. Fellows are evaluated on the following competencies, which are further explained in Section VII. Sub-specialty program directors also utilize the same evaluation criteria.

- **Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
- **Medical Knowledge** about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
- **Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
- **Systems-based practice through the** awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.
- **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.
- **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
SECTION III
PROGRAM SPECIFICATIONS

AMBULATORY CARDIOLOGY EXPERIENCE

Outpatient Clinic Description
Fellows are involved in longitudinal care of patients in the ambulatory setting throughout their 3-year fellowship required by ACGME. These activities take place at the Vanderbilt Heart and Vascular Institute (VHVI), in the outpatient clinic of the Raphael Smith Cardiology Center at the Nashville Veteran’s Affairs Medical Center (VA) or at Nashville General Hospital at Meharry Medical College (Meharry) to ensure exposure to a broad mix of patients and cardiovascular diseases. The ambulatory experience will teach Fellows to be competent in managing the full range of cardiovascular diseases seen in ambulatory patients. Didactic instruction in risk factors and epidemiology is conducted as part of the ambulatory experience through an outpatient case conference conducted at the VA once per month. Fellows are encouraged to function autonomously while faculty supervision and consultation are readily available.

Expectations and Structure
- Fellows will be assigned a 1/2-day of clinic per week at VHVI alternating with a 1/2-day clinic at the VA or Meharry.
- VHVI clinics are assigned in 6-month blocks. Over the course of 3 years broad exposure to the various disciplines in outpatient cardiology will be obtained with optional exposure to electrophysiology, adult congenital, preventive/lipid clinic and interventional clinics.
- VHVI is a multidisciplinary patient care center that offers a full complement of cardiac diagnostic testing modalities and allows for rapid access to testing and imaging procedures. The clinic is equipped with Exercise Testing and Physiology Lab, Echo Lab, Cardiac MRI Lab, Vascular Lab, Nuclear Cardiac Imaging Lab, and an Autonomic function laboratory. Fellows are encouraged to participate in the activities of these labs as much as possible during their outpatient VHVI experience.
- The VA clinic is a continuity clinic over the course of the entire three years allowing patient and attending continuity. The fellow will be responsible for longitudinal care of their panel and will add to the patient panel through new outpatient consults.
- A Fellow is expected to be on time for clinic and to discuss every case with his/her clinic attending before checking out the patient.
- Clinic notes must be current and expected to be detailed enough to ensure transfer of relevant information to other physicians.
- A Fellow is expected to follow up on all cardiac diagnostic testing ordered on his/her patients, and to discuss the findings with his/her clinic attending.
- He/she is also responsible for communicating test results and management plans to referring physicians and patients.
- If for any reason a Fellow is unable to fulfill clinic obligations, it will be their responsibility to reschedule the clinic to a date within 7 days of the original clinic.

Objectives
- To obtain the experience necessary to manage stable cardiovascular syndromes in the outpatient setting utilizing evidence-based and cost efficient methods.
- To learn the systematic evaluation and management of cardiovascular complaints, and to acquire expertise in the recognition of emergent and non-emergent cardiovascular diseases presenting to the outpatient clinic.
- To acquire the necessary skills required for accurate identification of cardiac disorders, cardiac risk stratification and prognostication of patients seen in the outpatient setting.
- To learn appropriate utilization of cardiovascular testing and imaging in patients with suspected or proven cardiac diseases.
At the end of Fellowship training, the trainee is expected to have adequate training and experience to integrate information from history, physical examination and cardiac testing in formulating diagnostic and management plans and to provide clear consultative opinions to referring physicians.

Outpatient Working Conference

An outpatient working conference meets once monthly from 5-6 pm to discuss topics related to the outpatient management of cardiovascular disease. The format includes case presentations/problem based learning, didactic sessions, review of management guidelines and discussion.

Curriculum

During the outpatient case conferences relevant curriculum topics listed below will be addressed:

- The cardiovascular history
- Examination of the Cardiovascular System
- Hypertension and Hypertensive Heart Disease
- Stable and Unstable Coronary Syndromes
- Valvular Heart Disease
- Ischemic and Non-ischemic Cardiomyopathy
- Diagnosis and Management of Arrhythmias
- Outpatient Management of Cardiac Devices
- Coronary Risk Factor Modification
- Peripheral Vascular Disease
- Cardiac Risk Stratification and Prognostication
- Choice and Utility of Cardiac Diagnostic Testing
- CAD management post infarct, PCI or CABG
- Safe use of Cardiovascular Drugs
- Management of complex lipid disorders

INPATIENT CARDIOVASCULAR SERVICES

Policy on Planned Absences from Inpatient Service Rotations:

Absence from a service for academic or personal reasons will only be allowed under extraordinary circumstances or with pre-authorization. Written authorization from the Fellowship Program Director, Chief Fellow, and on-service Attending should be obtained 2 weeks in advance if circumstances allow. Each Fellow is required to arrange coverage for his/her absence.

Arrhythmia Inpatient Consultation Description

The Heart Rhythm Service provides consultation to the VUMC inpatient and ER services. This includes appropriate and timely evaluation of implanted pacemakers, defibrillators and loop recorders with the assistance of device nurses and technicians.

Expectations and Structure

- Initial triage of consultation requests alerting the on-service Attending when a consultation request is urgent or an emergency.
- Notifying EP Attendings when a physician-specific or Page-Campbell service consultation is requested and staffing such consultations with said Attending on an as needed basis.
- The Fellow(s) is (are) responsible for an initial pre-op assessment of consult patients on whom EP lab procedures will be performed. This includes a review of relevant labs, assuring that the patient is on the schedule, addressing any obstacles to obtaining consent and notifying the primary patient care team that a procedure has been scheduled or completed.
During one week of each rotation, each general cardiology fellow assigned to the service will rotate in the EP lab to participate in EP procedures. During the time the EP fellow will cover the inpatient consultative service.

It is the responsibility of the Fellow(s) on service to present interesting cases from the Heart Rhythm Service at the weekly Arrhythmia Conference. Cases should be reviewed with the on-service Attending when appropriate. Arrhythmia lectures for the Harrison Housestaff are given weekly by the Attending on service. The EP Core Curriculum occurs twice monthly. Please refer to the current schedule for days, times and locations.

The EP Fellows make up the Weekend Day Coverage schedule. The General Cardiology Fellow assigned to Arrhythmia will cover at most three weekend days; this call runs from 7:00 AM to 2:00 PM on the weekend day assigned.

Objectives

- To gain a fundamental knowledge base for the diagnosis and management of common rhythm disturbances within the scope of practice for a general cardiologist.
- To become facile with the interrogation of pacemakers and ICD devices, and to gain an understanding of common device malfunction diagnoses.
- To understand the indications and contraindications for heart rhythm devices and invasive diagnostic tests available to the electrophysiologist.
- To gain a basic knowledge of genetic disorders of the cardiac conduction system.

Core Curriculum

The Fellow is expected to become familiar with the reading list (see below) during the first year rotation on the Arrhythmia Service and should demonstrate mastery of the content of the reading list before the second year on the Arrhythmia Service. The Fellow should be able to interrogate and provide an initial evaluation of the diagnostics of implanted devices by the end of his/her first month. Arrhythmia lectures for the Harrison Housestaff are given weekly by the Attending on service. The EP Core Curriculum occurs twice monthly. Please refer to the current schedule for days, times and locations.

Reading List

- Palpitations  
  [http://content.nejm.org/cgi/reprint/338/19/1369.pdf](http://content.nejm.org/cgi/reprint/338/19/1369.pdf)
- SVT  
- Syncope  
  [http://content.nejm.org/cgi/content/full/343/25/1856](http://content.nejm.org/cgi/content/full/343/25/1856)
- NMS  
- PM / BRADY  
  [http://content.nejm.org/cgi/reprint/334/2/89.pdf](http://content.nejm.org/cgi/reprint/334/2/89.pdf)  
  [http://content.nejm.org/cgi/reprint/342/10/703.pdf](http://content.nejm.org/cgi/reprint/342/10/703.pdf)
- PACE, VOL12 APRIL 1989 pp555-562
- SCD  
- ICD  
  [http://content.nejm.org/cgi/reprint/349/19/1836.pdf](http://content.nejm.org/cgi/reprint/349/19/1836.pdf)  
  [JAMA 2006;295:809-818](http://content.nejm.org/cgi/reprint/349/19/1836.pdf)  
  [JAMA 2006;296;2839-2847](http://content.nejm.org/cgi/reprint/349/19/1836.pdf)
- BIV Pacing/ICD  
- Long QT  
**ACC/AHA Guidelines**


**Chronic Heart Failure Inpatient Service**

The Heart Failure Program (HFP) is designed to provide comprehensive care to patients with heart failure and cardiac transplant. The inpatient service is composed of a heart failure/transplant attending, general cardiology fellow, internal medicine resident and two interns. The general cardiology fellow is responsible for participating in daily rounds and defining treatment plans. In addition, the fellow will evaluate and follow heart failure consults, participate in pre- and post-transplant care, and ventricular assist device management. Fellows will also have the opportunity, as interests dictate, to see outpatients with chronic heart failure and to gain experience with hemodynamic exercise testing and cardiopulmonary exercise testing.

**Expectations and Structure**

- The heart failure/transplant service will admit CHF patients daily from 7:00 AM-5:00 PM Monday through Friday. A maximum of 20 patients may reside on the service at any given time. Overflow will be distributed to the Harrison Services.
- Heart failure/cardiac transplant patients admitted to General Cardiology services can be transferred to the Heart Failure Service only after attending-to-attending communication has taken place to approve the transfer. A Heart Failure Consult can be obtained to assist the General Cardiology Services with management of complex CHF patients.
- Heart Failure Consult patients will be followed by the HFP Attending and Fellow.
- The Fellow’s responsibilities will include rounding with the HF team, rounding with the transplant service when a HF/transplant Advance Fellow is not available, and staffing all HF Consults from 7:00 AM to 5:00 PM Monday through Friday. Weekend coverage is performed by the on-call fellow.
- The Nurse Practitioner will admit HF patients and all Transplant patients daily in parallel with the HF Resident and follow these patients as directed by the Fellow or Heart Failure Attending.
- The HF/Tx Fellow participates in the Primary Call System as scheduled and must adhere to all Work Hour Policies (see Section VIII).

**Objectives**

- To gain understanding of the pathophysiology of acute and chronic heart failure
- To gain competence in the management of patients with heart failure using all tools available at a large academic medical center
- To understand the criteria for selection of patients for heart transplantation and the evaluation of such patients
- To understand the management of patients following heart transplantation within the scope of practice expected of a general cardiologist
- To learn interpretation of cardiopulmonary exercise testing and exercise hemodynamic studies
- To gain exposure to research in the areas of heart failure and heart transplantation
Curriculum

The heart failure and transplant didactic series takes place on the second through fourth Monday of each month at 10:30. The following curriculum is covered over the course of an academic year:

- Management of Acute Decompensated Heart Failure
- Medical therapy for acute and chronic heart failure
- Device management of acute and chronic heart failure
- Diastolic Heart Failure
- Hemodynamic monitoring
- Transplant management
- Heart Failure Clinical Research

Conferences

A Heart Failure Case Conference meets every Monday at noon during which service patients presenting with interesting diagnostic and management dilemmas are presented and discussed. The HF/Transplant advanced fellow and the HF fellow are responsible for preparing the discussion.

The transplant team meets weekly to discuss the status and listing of patients for transplant and device therapy. The CHF Fellow on the rotation is expected to attend. Please refer to the current schedule for day, time and location.

Cardiovascular Intensive Care Unit Rotation

The Cardiovascular Intensive Care Unit (CVICU) at Vanderbilt is a 36-bed ICU for cardiology and cardiac surgery patients. The CVICU rotation for Fellows entails supervision of residents in the care for critically ill cardiology patients. Complex management is provided including the use of intra-aortic balloon pumps and various ventricular assist devices. The Fellow on this rotation is responsible for rounding with the team, participating in patient management decisions, interpretation of diagnostic testing, performance and supervision of invasive procedures, and teaching the Housestaff assigned to this rotation. The Fellows assigned to this rotation will follow only the cardiology patients within the CVICU. The CVICU is staffed 24 hours by two fellows with overlapping 13-hour shifts six days a week. Two moonlighting Fellows staff the seventh day of the week with alternating 12-hour shifts.

Expectations and Structure

- The CVICU rotation is staffed by an Attending, two Fellows (alternating 12-hour shifts), and 3 internal medicine residents who take Q3 in-house call. Residents remain the primary caregiver of the patients performing the majority of clinical decision making, line procedures, cross-cover, and daily work. The Fellow supervises the resident, teaches critical care issues and assists with difficult patient management. The morning/day Fellow (7:00 AM-7:00 PM) runs rounds with the Attending and assists in designing the treatment plan for the patient. The evening Fellow (7:00 PM-9:00 AM) comes in and rounds with the day Fellow and executes any outstanding clinical plans and oversees new admissions.
- Fellows will rotate for 2-week blocks on the morning/day shift and the night shift. Rotation fellows will have >24 hr period out of the hospital over the weekend which is covered by a cardiology moonlighter.
- On weekends 24 hours from Saturday 7:00 PM until Sunday 7:00 PM is covered by a moonlighting cardiology Fellow, except during switch periods which are covered by a moonlighter from Saturday 7 am to Sunday 8 pm.
- The CVICU Fellow is responsible for assessing all new admissions, being available for Emergency Department assessment of CVICU level new admissions, or acute ST elevation MIs (STEMI), and supervising all invasive procedures.
- The CCU fellow will take the role of senior physician for in-hospital codes from 7 pm to 7 am. The MICU interns and residents are expected to attend all codes to assist the CCU fellow. The CCU fellow has final say for disposition of the patient following successful resuscitation.
Curriculum
- Acute management of cardiogenic shock with use of mechanical assist devices
- Treatment of hemodynamically unstable NSTEMI and STEMI
- Management of retroperitoneal bleeds
- Acute and chronic decompensated heart failure requiring hemodynamic monitoring.
- Diagnosis and treatment of VT and other hemodynamically unstable arrhythmias
- Management of outside hospital sudden cardiac death and hypothermic therapy
- Management of in-hospital codes

Vanderbilt University Hospital Consults
The Vanderbilt University Hospital (VUH) consult service consists of two Attendings, a Fellow, and an Internal Medicine resident. One attending is assigned to the inpatient ward services and one to the intensive care services. Consults in the Emergency Room are seen as needed based on availability of coverage by the ER Liaison attending. The consult service will round daily as well as during the day as needed to staff consults based on their urgency.

Expectations and Structure
- The Fellow will round with the team daily and see all new inpatient consults in conjunction with the resident from 7:00 AM to 5:00 PM on weekdays. This includes cardiology consults from the Emergency Department as needed based on ER Liaison availability.
- All urgent consults should be staffed on an ongoing basis throughout the day with the Attending.
- The consult Fellow is responsible for all pre-catheterizations and consents on consult patients added to the cath schedule.

Curriculum
- Pre-operative cardiovascular assessment
- Management of valvular disease
- Work-up of heart failure
- Management of atrial fibrillation
- Management of cardiovascular risk factors in the hospitalized patient

Conferences
Clinical Management Conference occurs weekly with a once per month morbidity and mortality session. See current schedule for day, time and location.

Veterans' Affairs Medical Center Rotations
The Veterans' Affairs Medical Center (VA) in Nashville on the Vanderbilt campus consists of a 233-bed general hospital and an ambulatory care, education, and research facility. VA beneficiaries have a high prevalence of geriatric cardiovascular disease and VHVI plays a major role in providing state-of-the-art care. Three Fellows are assigned to cover cardiovascular services at the VA; the CCU Fellow, the Consult Fellow, and the Cath Fellow. During the 4-week rotation the Fellows assigned to VA rotations will alternate covering VA CCU and consults on weekends until 2:00 PM.

VA CCU
Expectations and Structure
- The CCU Fellow, an Attending, and Internal Medicine residents are responsible for the patients in the CCU. The CCU Attending and CCU Fellow continue to follow patients transferred from the CCU, or collaborate with the VA consult service to do so.
- The CCU Fellow may also perform Trans-Esophageal Echocardiography (TEE) on both inpatients and outpatients, under the supervision of the VA TEE Attending.
- The CCU Fellow is involved in the daily management decisions for patient care, interpretation of invasive and noninvasive testing, and teaching the Housestaff assigned to the VA CCU.
The CCU Fellow discusses transfers to the VA with referring physicians and appropriately triages these patients to the CCU or the floor.

The CCU Fellow pre-caths and consents patients in CCU.

The CCU Fellow is expected to read ECGs in the CCU Fellow’s office mailbox.

**Curriculum**

See VUH CVICU above.

**Conferences**

See VUH CVICU above.

**VA Consults**

- The Consult Fellow, an Attending, and an Internal Medicine resident make daily consultative rounds.
- The Consult Fellow reviews the daily requests for consultations, assigns the resident an appropriate number of patients, and performs cardiac consultations.
- Later in the day, the Consult Fellow organizes and conducts rounds with the consultation team, and is responsible for supervising activities of the Heart Station.
- VA Consult Fellow interprets outpatient Holter Monitors, which are placed in consult ECG box.

**Curriculum**

See VUH CVICU above.

**Conferences**

See VUH CVICU above.

**VA Cath Lab**

- The Cath Lab Fellow will evaluate patients referred by the consult service or CCU for cardiac catheterization, and if appropriate, make arrangements for and participate in the cardiac catheterization procedure.
- The Cath Lab Fellow evaluates the outpatients scheduled for cardiac catheterization and performs a history and physical pre-catheterization evaluation for these patients the morning of the procedures.
- Cardiac catheterization data are interpreted by the Fellow, and are reviewed with an Attending.
- Reports are to be completed within 48 hours of the study. All Fellows participate in the cardiac catheterization conferences at VA and at Vanderbilt.

**Nashville General Hospital at Meharry**

Nashville General is the public hospital for Nashville and Davidson County. As such it is the primary source of healthcare delivery for the underserved and indigent population in this region, and provides a diverse clinical experience for Fellows. This rotation focuses on an integrated mixture of inpatient consults, nuclear cardiology, cardiac catheterization, TEE’s, ECG and Echo interpretation. The rotation is in the process of being redesigned to entail 3 tracks: (1) Cardiac catheterization track (2) Non-invasive imaging track and (3) Clinical management track. The roles of the fellows in each track are outlined in Appendix A at the end of this document. This is a rotation intended for Senior Fellows, and in some cases Junior Fellows at the end of the 1st year of training. The Chief of Cardiology at Meharry Medical School supervises this rotation.

**Expectations and Structure (Also see Appendix A for Fellow’s responsibility in each track)**

- Interpreting and completing 2D preliminary echo reports.
- Performing all TEE’s
- Performing all Consults or directing the Consult Resident to do so when one is assigned to the Service.
- Supervision over nuclear and exercise stress tests
- Participating in selected catheterizations
- Fellows are on call on Wednesdays, or Mondays and Thursdays every alternate week. There will be NO weekend calls or calls during Federal holidays.

Curriculum
See above General Cardiology, consult cardiology, echo and cath lab curriculum.

Conferences
It is mandatory that Fellows attend the Clinical Management Conference and Cardiology Grand Rounds at VHVI, and work permitting, all other Fellow Conferences at Vanderbilt. Please refer to the current schedule for days, times and locations.

Fellows will be expected to prepare and present one Clinical Management Conference to the Meharry cardiology faculty, residents rotating on the service and staff working in the heart station.

CARDIOVASCULAR LABORATORY ROTATIONS

Cardiac Catheterization Laboratory
Vanderbilt's cardiac catheterization laboratory is a state-of-the-art facility that performs more than 3000 catheterizations and 1500 interventions annually, drawing upon an extensive referral base throughout middle Tennessee. In 2004, the cath lab underwent an extensive renovation to open the nation’s first hybrid OR/cath lab to enable “completion angiography” of surgical revascularization and complex hybrid percutaneous and surgical revascularization. Vanderbilt's catheterization lab provides an ideal environment for cutting-edge procedural training.

Expectations and Structure
- The Cath Lab work hour requirement is 7:00 AM until scheduled cases are completed or 9:00 PM.
- A senior cath fellow is assigned per rotation to ensure patient care tasks are completed in an efficient manner.
- Each Fellow is assigned to a room/attending on a rotating basis. The Fellow assigned to the room has the primary responsibility to perform appropriate patient workup, review of labs, diagnostic procedures, and post procedure management. She/he is responsible to coordinate the efforts from floor Fellows and Nurse Practitioners (NPs). After the procedure, diagnostic Fellows are responsible to communicate with residents, Fellows or NPs who are caring for the patients on the floor or recovery room.
- Pre-cath evaluations, consents, and orders on outpatients must be completed on each outpatient with the assistance of NPs.
- Pre-cath and consent for inpatients on the teaching service are completed by the cath fellows.
- The Cath Fellow is expected to meet the patient and understand indications and pertinent vascular and exam prior to participating in any case.
- Cath Fellow who performed the case does post-cath orders on Wiz Order immediately following every case. Interventional Fellows will enter post-cath orders on patients who undergo an intervention.
- The Interventional Fellow will perform pre-caths, consents, and orders on those patients who are undergoing a planned intervention or for patients transferred to Vanderbilt for an intervention. The Interventional Fellow is also responsible for Admission H&P/orders and discharge of non-teaching interventional patients;
- Diagnostic Fellows should remain in the lab until all diagnostic cases are done or 9:00 PM whichever comes first.
- Cath Fellows assigned to Primary Call: Cath duties cease at 5:00 PM to begin Primary Call Duties; the Cath Fellow is not expected to begin a case that has potential to run past 5:00 PM when assigned to 1st Call.
On days where the Cath Fellow is post 1st Call, cath duties cease at 2:00 PM.
Cath reports are computerized in a template form. After the report is discussed with the Attending that performed the case, the report is sent to Star Panel and the Attending will perform an attestation. If an intervention is performed, the Cath Fellow DOES NOT send the report to Star Panel; the Interventional Fellow will enter all interventional details and send the report.

Managing Complications
- Diagnostic Fellows are responsible for managing complications for all the diagnostic procedures done in their rooms with supervision from interventional Fellows and Attendings.
- Fellow will enter all complications in the cath report system

Groin Management-1st year Fellows
- Pull two sheaths a week during their rotation
- Learn how to place a Femstop device (1st year with supervision from 3rd year or interventional Fellows)
- Pull balloon pumps (1st year with supervision from 3rd year or interventional Fellows). First year fellows should be proctored on five (5) balloon pump pulls before performing this independently.

Presentations at Conferences
Diagnostic Fellows are responsible for case presentations at the weekly Cardiac Cath/Nuclear/CTA conference. Each week cases alternate between cardiac nuclear perfusion, coronary CTA, and cath cases as follows: First Wednesday—CTA with cath correlation; Second Wednesday—Cardiac cath cases, MRI correlation cases if available; Third Wednesday—Nuclear-cath correlation presented by nuclear fellow; Fourth Wednesday—Cardiac cath cases. Cases should be reviewed with cath lab director or designee the day before the conference. The Interventional Cardiology Conference is also held weekly on Fridays at 7:00 am. Please refer to the current schedule for days, times and locations.

Measurement of Progress
The Cath Lab Director or designee is required to meet the cath Fellows the 1st day and last day of their rotation as a group. The purpose of the meeting is to outline expectations and requirements for the rotation. It is also important to get feedback from Fellows about their concerns, questions, and suggestions so that the rotation can be improved. All diagnostic Fellows will receive verbal and written feedback at the end of each month. Specific strengths and weaknesses will be identified. Any areas requiring extra attention will be identified, and a plan for addressing these areas will be outlined with the Cath lab/Fellowship Director. All diagnostic Fellows will take an exit exam based on their year of training. The exam will consist of written and simulator parts.

Curriculum
- 1st year-3 months; 2nd year-2 months; 3rd year-2 months
- Rotation in a consecutive block. Suggestion: 1st year Fellows will enter the 2-3 month block and 2nd/3rd year Fellows 2 month block in a staggered fashion so that only one Fellow each month is completely new.
- 1st year at Vanderbilt
- 2nd year at VA
- 3rd year at Vanderbilt (for Fellows interested in being level II or III in cardiac cath)

Differential Training Curriculum (with different year of training)
- 1st year--basic techniques including routine diagnostic catheters, manifolds, basic hemodynamics (right heart cath, valvular disease, pulmonary hypertension).
- 2nd year--relative independent in diagnostic procedures with assistance from interventional Fellows. Learn how to set up views, special diagnostic catheters and table panning.
3rd year--supervising and teaching responsibility for the 1st year Fellows in the lab. Participating complex diagnostic cath (congenital, peripheral diagnostics, radial access, graft angiography, HOCM) and exposure to interventional procedures (10 interventional cases, 2 ASD/PFO closure, 2 valvuloplasty, 5 ICE, 5 IVUS).

**Planned Absences**
Scheduling absences during a cath month is discouraged but if necessary must cleared with the Cath Lab Director and coverage needs to be arranged. Absence from the cath lab for academic or personal reasons will only be allowed under extraordinary circumstances or pre-authorization. Written authorization from the Fellowship Program Director, Chief Fellow, and Cath Lab Director should be obtained in advance. Each Fellow is required to arrange coverage for his/her absence, working with the Chief Fellow to find individuals on elective blocks to fill in. In general, no more than one week per year will be allowed. It is the responsibility of the diagnostic Fellow to arrange coverage if he/she is sick or leaving for a conference.

**Echocardiography Laboratory**
The Echocardiography Laboratory (Echo Lab) is a state-of-the-art facility housed within VHVI with separate suites for 2D transthoracic echocardiography, transesophageal echocardiography (TEE), and stress echocardiography. Training requirements for Fellows in surface echocardiography follow the American College of Cardiology Task Force recommendations (COCATS 2008). TEE training is based on those of the American Society of Echocardiography (JASE 5:187-94, 1992), as is stress echo training (JASE 11:95-6, 1998).

Demonstration of expertise to the Attendings and Sonographers in the Echo Lab demands that significant time be devoted to the performance and interpretation of surface echocardiograms. The Fellows should recall the training guidelines, direct their efforts accordingly, and be sure that written or computer-generated reports document both their performance and interpretation of studies. Such documentation should be provided to the Fellowship Coordinator for placement in the Fellow’s personnel file at the end of each Echo Lab rotation.

**Expectations and Structure**
- The 1st year Fellows will have one or two, 1-month blocks dedicated to echocardiography. During this time it is imperative that Fellows do three things:
  - Spend as much time as possible with the Sonographers (either at VU or VA) and ask them to demonstrate how the machines work, showing how to obtain views with the probe. Fellows will need to know how to perform a basic study independently prior to beginning Primary Call responsibilities.
  - Watch and assist with some of the TEEs. You will responsible for performing TEEs after hours with the TEE attending on call when on Harrison Service call. Mainly you will need to know where everything is kept for the setup at night; we will go over these early in the year.
  - At the beginning of the year, observe dobutamine stress-tests in order to become familiar with the protocol and possible pitfalls or complications. These are done both at VHVI. The Fellow is required to standby for dobutamine stress echoes at the vicinity of the site of the study. The Sonographer will page Fellows before each study and if a Fellow cannot be available, except in emergencies, it is his/her responsibility to call the back-up Fellow to stand in.
- The 1st Fellow will learn the indications and proper technique to perform a bubble/agitated saline study during the day. The Sonographers may call Echo Fellows to supervise and perform the study if a RN is not available. They can show you how to inject and make sure the patient has a working IV in place.
- Echo duties cease at 5:00 PM to begin Primary Call Duties, when on-call Fellows maybe to asked to perform urgent TTE and TEE (call TEE attending on call to discuss potential after hours TEE)
The Senior Fellows are responsible for TEE’s every day from 7:00 AM to 5:00 PM. The Junior Fellow will cover TEE’s when the Senior Fellow is in clinic, or in accordance with work hour policy rules. This is a great opportunity for all Junior Fellows as it gives them TEE experience early on in their training. Prior to each TEE the fellow should meet the patient and understand indications for the TEE. Along with anesthesia, the patient needs to be deemed an appropriate elective outpatient TEE (no significant respiratory complications, dysphagia, variceal bleeds, or previous endoscopic issues). Patients will be consented and prepped for TEE. The TEE Attending of the day will assist in the procedure. TEE reports are generated by the Fellow after review with the Attending and finalized by the Attending by the end of the day. Inpatient/portable TEE are reviewed with TEE Attending to ensure appropriate indications and patient safety.

**Differential training curriculum (with different year of training)**

- 1st year: Month one; basic echo views and standard exam, assess wall motion, understand various Doppler and M mode techniques, begin evaluation of valvular disease and diastolic dysfunction. Month two: refine skills of performing Echos and gain further understanding of native and prosthetic valve disease.
- 2nd and 3rd year: Able to complete full echo exam and read Echos independently with minimal attending supervision.

**Conferences**

The Echocardiography Conference (CME) occurs weekly. Please see current schedule for day, time and location. Once each month the conference is dedicated to a Core Echo topic (refer to conference list of core curriculum).

**Cardiovascular MRI Laboratory**

Fellows rotate through our state-of-the-art Cardiovascular MRI Laboratory during their Imaging rotation, which is a combined month with Outpatient Nuclear Cardiology. During this rotation, Fellows are instructed on MRI safety procedures, and encouraged to be present to observe individual patient image acquisition for both cardiac MRI and vascular MRA studies. These studies are then reviewed with the Attending physician. Fellows can expect exposure to a wide variety of cardiac and vascular conditions, which involve various methods of image processing, manipulation, and calculation. Fellows also receive a didactic lecture series on MRI physics, image acquisition, indications, and interpretation.

**Nuclear Cardiology**

Nuclear cardiology training occurs through joint effort between the Division of Cardiovascular Medicine and the Division of Nuclear Medicine in the Department of Radiology and Radiological Sciences. Exposure to outpatient-based nuclear cardiology testing is achieved during the VU Imaging rotation at VHVI, and exposure to nuclear cardiology applied to the management of inpatients is achieved during the VU Nuclear rotation. During these rotations, fellows are exposed to a program of didactic instruction covering radiopharmaceuticals, radiation safety, myocardial metabolism, and the sensitivity and specificity on non-invasive imaging studies. In addition, Fellows are encouraged to participate in a monthly Journal Club in Nuclear Cardiology organized by the Radiology Faculty, and present cases during a monthly cath-nuclear-CTA correlation. Please see current schedule for day, time and location. Research opportunities are offered to interested fellows to obtain qualifications for Level III nuclear licensure. While in the nuclear radiology department the Cardiology Fellows and the nuclear radiology fellow are in charge of overseeing and performing exercise and pharmacological stress testing.

**Expectations and Structure**

- Perform stress and interpret nuclear images with Radiology Nuclear Attending Monday through Friday. On Mondays and Thursdays Fellows will not only read inpatient studies in radiology but will interpret outpatient nuclear stresses from VHVI clinic with a Radiology Nuclear Attending.
• The Emergency Department can order nuclear stress tests until 4:30 PM on Mondays through Fridays. The Cardiology Fellows and Nuclear Medicine Fellows work together to perform all of these studies. **Cardiology Fellows must be excused from 12:00 PM-1:00 PM to attend daily conferences.**

• Nuclear stress tests can be ordered on the weekend between 7am and 3:30pm. The Nuclear radiology fellow on call is responsible for performing and interpreting these weekend tests.

• The Imaging Fellow will help cover the Cardiology Nuclear Fellow and vice versa for vacations.

• Cardiology Fellows are not responsible for arranging coverage during clinic but they do need to let the Nuclear Medicine Attending know they will be unavailable.

  ➢ Nuclear Cardiology Fellows assigned to Primary Call

  ➢ Nuclear duties cease at 5:00 PM to begin 1st Call Duties; any cases left to read will be done by the Nuclear Medicine Staff. On days where Cardiology Fellows are post 1st Call, Nuclear duties cease at 2:00 PM and will be covered by the Nuclear Medicine Staff thereafter.

**Curriculum**

➢ Indications for nuclear stress tests

➢ Contraindications to nuclear testing

➢ Discerning between pharmacological versus exercise stress testing

➢ Safe use of radionuclides (basic biology, preparation, protection)

➢ Operations and quality control of cameras

➢ Image processing and interpretation

**Conferences**

➢ The Nuclear/Physics course occurs February through July and are held in the Radiology conference room Monday and Thursday 5:00 PM-6:00 PM. Fellows need to attend 50% of these lectures if to be certified at level II in Nuclear Cardiology.

➢ The Cardiac Cath-Imaging correlation conference is held weekly. Please refer to the current schedule for day, time and location. Patients who underwent both nuclear perfusion imaging and subsequent cardiac catheterization are presented in a case-based format. Nuclear Radiology Fellows and Cardiology Fellows prepare this conference together for the 3rd Wednesday of the month. Cases selected for presentation should be reviewed prior to the conference with the Nuclear Medicine Attendings.

➢ The VHVI Imaging Fellow(s) are responsible for presenting a monthly Nuclear Medicine Journal Club. The topics and articles will be assigned at least 4 weeks prior to the presentation.

**Vanderbilt University Hospital Imaging Rotation**

This is primarily a Cardiac MRI and Nuclear Cardiology Rotation that will satisfy the 1-month MRI requirement and count towards the total number of nuclear rotations done throughout the Fellowship training period.

**Expectations and Structure**

➢ Fellows will read all the nuclear studies performed at VHVI. These studies will be read with VHVI Attendings on Tuesdays, Wednesdays and Fridays with the assigned VHVI Attending. The rotation also serves as an ECG reading and Stress-Testing rotation.

➢ Fellows will ascertain the Cardiac MRI schedule for the week on Monday morning and arrange to be present for protocol selections with the Director of the Cardiac MRI every morning that studies are performed. Studies are then interpreted on a case-by-case basis with either Attending, on a flexible schedule to be determined.

➢ Be present on site for possible emergencies for any outpatient dobutamine stress echoes and stress tests at VHVI.

➢ The Fellows assigned to Imaging and VU Nuclear generally cover each other for vacation periods, completing all duties for both rotations.
**Non-Teaching Service (EP/Interventional at VUH/VA)**

Between the hours of 5:00 PM and 7:00 AM, the non-teaching EP and Interventional service is covered by the on-call EP and Interventional Fellow. Non-teaching general cardiology patients are signed out to the on-call Harrison intern. The primary call Fellow is available for back-up in emergency cases for all non-teaching services to help facilitate urgent evaluation and care if needed. During the weekdays from 7:00 AM to 5:00 PM non-teaching admissions, discharges, and daily rounds are managed by NPs. Weekend coverage for the Page Campbell is handled by the weekend rounding nurse practitioner until 2:00 PM and then signed out to on call Harrison intern.
SECTION IV
ADVANCED TRAINING

Cardiac Transplantation/Advanced Heart Failure
The cardiac transplant service provides training for one fellow who has completed basic cardiovascular medicine training. This 4th year position is designed to provide comprehensive training in the management of patients with CHF and the evaluation and identification of candidates for cardiac transplantation. The Fellow is also an integral member of the Cardiac Heart Failure/Transplant Service, and is involved in early and late medical management of transplant recipients, both in hospital and in the ambulatory setting.

Heart Failure and Device Training Program
The heart failure and device fellowship training program allows for 1 year of training in cellular therapeutics and device therapy. The model has been developed to provide equal exposure to management of complex heart failure patients and hands-on experience with defibrillator implantation and optimization of biventricular devices.

Clinical Cardiac Electrophysiology Training Program
The Clinical Electrophysiology Fellowship Training Program 1-2 years in duration, qualifying Fellows for subspecialty board certification in Clinical Cardiac Electrophysiology. Complete training is provided in the diagnosis and management of complex cardiac rhythm disturbances, the performance and interpretation of standard electrophysiology studies; the performance of radiofrequency catheter ablation procedures; and the evaluation and implantation of permanent pacemakers and implantable cardioverter defibrillator and biventricular pacing device systems. It is anticipated that the EP Fellows will actively participate in clinical and/or basic research projects as part of sub-specialty training.

Interventional Cardiology Training Program
The Interventional Cardiology Fellowship Training Program provides the opportunity for physicians to become certified as a primary operator in invasive and interventional cardiovascular medicine according to the standards set forth by the American College of Cardiology. The opportunity is extended to individuals who have successfully completed a Cardiovascular Medicine Fellowship at an approved institution and who are board eligible in Internal Medicine and Cardiovascular Diseases. The Fellowship normally begins July 1 and extends until June 30 of the following calendar year.

Expectations and Structure
The Fellow will have the following duties and privileges:
- Perform interventional procedures under supervision at both the VUH Cardiac Catheterization Laboratories and the VA Cardiac Catheterization Laboratory;
- Assume responsibility for all issues regarding vascular access;
- Gain competence in all interventional modalities, to include PTCA, DCA, stent placement, rotablator, IABP insertion and operation, intravascular ultrasound, intracoronary Doppler flow analysis;
- Assume a call schedule for after hours call from 6:00 PM-8:00 AM consisting of one week and weekend on followed by one week and weekend off call;
- Participate in follow-up of ambulatory patients;
- Sign a non-compete clause for Middle Tennessee.

Peripheral Vascular and Structural Heart Disease Training Program
After completion of one year of advanced training in Interventional Cardiology an additional year of training is available in peripheral vascular interventions and structural heart disease. It is possible to gain advanced training in the percutaneous management of carotid stenosis, patent foramen ovale/ASD, HOCM, complex peripheral vascular disease and circulatory failure (TandemHeart and Impella).

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SECTION V

EDUCATIONAL CURRICULUM AND CONFERENCES

Conferences are an important means of teaching fundamental elements of our Cardiovascular Medicine curriculum. The greater objective of our educational curriculum is to complement clinical and research experiences, while providing structured instruction in many areas including cardiovascular pathology, anatomy, genetics, epidemiology, molecular biology, physiology, and pharmacology. Fellows will obtain a working knowledge of these important curricular components to allow application to clinical and/or research practice, and to successfully pass the ABIM board examination in Cardiovascular Diseases.

All Fellows participate in several conferences weekly, and are directly responsible for giving Cardiology Grand Rounds at least once during their training period. A topic directed Journal Review Series pairs a junior Fellow with a Faculty member to analyze and present a recently published report that has had a major impact on clinical cardiovascular practice. Cardiology Grand Rounds is a Division-wide conference dedicated to clinical and/or scientific topics in Cardiovascular Medicine.

Weekly case and curricula based conferences are given by the cardiac catheterization laboratory, the arrhythmia service, the echocardiography service, adult congenital heart disease group, and by our research faculty. A comprehensive core lecture series is organized around objective based learning to ensure that Fellows are fully prepared to meet the training expectations set forth by the program. Residents rotating through our clinical services are invited to participate in our Divisional meetings, and the Harrison and Arrhythmia Services give weekly didactic sessions specifically for them at VUH. In short, we have created an educational curriculum at Vanderbilt that we fully expect will meet all of the needs of our Fellows.

Please refer to the current schedule for a list of conferences, days, times and locations.
SECTION VI

RESEARCH OPPORTUNITIES

A wide variety of basic and clinical research experiences are available to the Fellow within the Division of Cardiovascular Medicine and in related areas. We expect that during training, each Fellow will participate in a research project to gain expertise in one or more research techniques. It is expected that by the end of three years of training a fellow will learn how to acquire and analyze data, understand its significance, and how to present it clearly. In addition, we hope that each Fellow will have a chance to share in the intellectual fun and excitement that we embrace and enjoy on this faculty.

Each 1st year Fellow will meet with the Program Director and Director(s) of research in July to discuss his/her research interests. Fellows are paired with a faculty mentor(s) during their first year to promote personal and academic growth. During the first year, we expect Fellows to decide on a general area or theme he/she would like to explore, e.g., vascular biology, ventricular function, heart failure, integrated cardiovascular physiology, hypertension, electrophysiology, etc. Fellows are encouraged to thoroughly explore all options for research and mentorship throughout the Vanderbilt campus.

Division and Faculty mentor funds support all Fellows engaged in research training during clinical fellowship. All Fellows committing to dedicated research training are fully supported by our NIH Training Grant (T32, HL#007411-26), or by Faculty related funding. We expect these Fellows will require at least 2 dedicated research years in addition to their clinical training. During the first year of dedicated research training, we encourage all of our research Fellows to gain experience in grantsmanship by helping them write for independent support available for Fellow research training through the NIH, ACCF, AHA, HRS, HFSA etc..

Fellows who anticipate joining a Faculty at the completion of research training are mentored through the preparation of a proposal for early investigator funding, such as NIH K08 or K23 awards, or similar awards supported by the AHA, ACCF, or Industry. Preparing a research proposal serves as a stimulus to organize reading and thinking, and is an important part of the training process for an academic career. Fellows entering the training program as Harrison Society Scholars through the Department of Medicine Physician-Scientist Training Program are obligated to three years of research training, the last of which can take place as a Junior Faculty member provided that 80% of their time is related to research (www.abim.org). Mentoring of these Fellows takes place as we have outlined, and through close collaboration with Physician-Scientist Training Program Director in the Department of Medicine. Throughout the research training years, Fellows are only required to maintain a 1/2 day clinic per week, as required by the ACGME/ABIM, but are otherwise completely free of any clinical duties.
SECTION VII
QUALITY IMPROVEMENT CURRICULUM

Participation in a longitudinal quality improvement project is an integral part of the fellowship training program. Our quality improvement curriculum is based on practice metrics improvement. The 1st and 2nd year fellows receive didactic training in development and implementation of quality improvement projects. Each 2nd year fellow is responsible for completing a QI project using the PDSA cycle with the help of the 1st year fellows and a QI mentor. The 2nd year fellows can work in groups of 2 (maximum). It will be expected that the current 1st year fellows will lead their own quality project during their second year.

Steps in creating a QI project (based off a PDSA cycle):
1. Identify a problem.
2. Identify metrics that help define the problem.
4. Implement a solution.
5. Using a quantifiable metric, evaluate whether your solution was successful.
6. Refine the solution.
7. Evaluate whether the solution was successful.

We have quarterly QI meetings so we can keep the fellows accountable and see how their projects are progressing. The curriculum wraps up during the final sessions of Clinical Management Conference in June where the fellows will present their projects to the whole department.
SECTION VIII

EVALUATION AND SUPERVISION

Mutual evaluation between Faculty and Fellows is an important component for measuring the ongoing efficiency of our training mission. All Fellows and Faculty are required to electronically complete evaluation forms after each month. Faculty are expected to meet with Fellows to discuss evaluations at the end of each rotation. Less formal and more frequent evaluations are also important and take place throughout the training program. Furthermore, Fellows are given the opportunity to comprehensively review the training program on an annual basis with their commentary helping address the broad needs of Fellows. A monthly Fellows’ meeting is conducted by the Fellowship Director and Chief Fellow to enable more regular communication and resolution of issues pertinent to training.

The Fellowship Director will meet with all Fellows at least twice each year to review written evaluations, discuss strengths, remedy weaknesses, and to help sculpt the training program to best fit individual Fellow's career goals. Fellows are evaluated on the following competencies:

- **Patient Care** - The Fellow should provide compassionate care that is effective for the promotion of health, prevention, treatment, and at the end of life. This evaluates how the fellow performs interviews, exams, and procedures; evaluates the fellow's judgment and respect of patient preference.

- **Medical Knowledge** - The Fellow should demonstrate knowledge of biomedical, clinical and social sciences, and applies that knowledge effectively to patient care. Evaluator should comment on the Fellow's knowledge base, continuous learning, and comprehension of complex problems.

- **Practice-Based Learning and Improvement** - The Fellow should use evidence and methods to investigate, evaluate, and improve his/her patient care practices. Evaluator should comment on Fellow’s self-assessment, use of new technology, and how he/she accepts feedback.

- **Communication and Interpersonal Skills** - The Fellow should demonstrate communication and interpersonal skills and maintain professional and therapeutic relationships with patients and healthcare team. Fellows should establish relationships with patients/families; seek to educate and counsel patients; and maintain comprehensive, timely, and legible medical records.

- **Professionalism** - The Fellow should demonstrate behaviors that reflect an ongoing commitment to continuous professional development, ethical practice, sensitivity to diversity, and responsible attitudes. Evaluator should comment on respectfulness, compassion, honesty; consideration of patients and colleagues; and if he/she accepts responsibility for errors.

- **System-Based Practice** - The Fellow should demonstrate both an understanding of the contexts and systems in which health care is provided and should apply this knowledge to improve and optimize health care. Evaluator should comment on the fellows' use of resources, reduction of errors, and improvement of the systems of health care.

- **Clinical Judgment** - The Fellow should regularly integrate medical facts and clinical data, weigh alternatives, understand limitations of knowledge, and incorporate consideration of risks and benefits. The Fellow should spend time appropriate to the complexity of the problem. Presentations, records, and consultation notes should be accurate, responsive, explicit, and concise.

- **Clinical Skills** - The Fellow should be precise, logical, thorough, reliable, purposeful, and efficient. Must be suitably focused with specificity and clarity and convey sophistication. Fellows should do complete physical examination that is accurate and directed toward the patient’s problems. The Fellow should elicit subtle findings, using special techniques when necessary. The Fellow should be proficient and minimize risk and discomfort to patients and provide proper explanation of purpose for conducting procedures.

- **Medical Care** - The Fellow should identify all of the patient’s problems; should interrelate abnormal findings with altered physiology; should establish sensible differential diagnoses; should provide orderly succession of testing and therapeutic recommendations; educate the patients and referring physicians; marshal support of allied professionals when team efforts are required.
SECTION IX
WORK HOUR STANDARDS

Duty Hours
Duty hours are defined as all clinical and academic activities related to the residency program, i.e., patient care (both inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spend in-house during call activities, and scheduled academic activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

- Duty hours must be limited to 80 hours per week, averaged over a 4-week period, inclusive of all in-house call activities.
- Fellows must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. One day is defined as one continuous 24-hour period free from all clinical, educational and administrative activities.
- Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

On-Call Activities
The objective of on-call activities is to provide Fellows with continuity of patient care experiences throughout a 24-hour period. In-house call is defined as those duty hours beyond the normal work day when Fellows are required to be immediately available in the assigned institution.

- In-house call must occur no more frequently than every third night, averaged over a 4-week period. There is no required in-house call for Fellows.
- Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Fellows may remain on duty for up to six additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care as defined in Specialty and Subspecialty Program Requirements.
- No new patients, as defined in Specialty and Subspecialty Program Requirements, may be accepted after 24 hours of continuous duty.
- At-home call (pager call) is defined as call taken from outside the assigned institution.
  - The frequency of at-home call is not subject to the every third night limitation. However, at home call must not be so frequent as to preclude rest and reasonable personal time for each Fellow. Fellows taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.
  - When Fellows are called into the hospital from home, the hours Fellows spend in-house are counted toward the 80-hour limit.
  - The program director and the faculty must monitor the demands of at-home call in their programs and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

Moonlighting
- Because fellowship training is a full-time endeavor, the Program Director must ensure that moonlighting does not interfere with the ability of the Fellows to achieve the goals and objectives of the educational program.
- The Program Director must comply with the sponsoring institution’s written policies and procedures regarding moonlighting.
- Moonlighting that occurs within the fellowship training program and/or the sponsoring institution or the non-hospital sponsor’s primary clinical site(s), i.e., internal moonlighting, must be counted toward the 80-hour weekly limit on-duty hours.
SECTION X

SUPPLEMENTAL INFORMATION

Equal Opportunity/Affirmative Action
In compliance with federal law, including the provisions of Title IX of the Education Amendments of 1972 and Sections 503 and 504 of the Rehabilitation Act of 1973, Vanderbilt University does not discriminate on the basis of race, sex, religion, color, national or ethnic origin, age, handicap, or military service in its administration of educational policies, programs, or activities; its admissions policies; scholarship and loan programs; athletic or other University-administered programs; or employment. Inquiries or complaints should be directed to the Opportunity Development Officer, Franklin Building, West Side Row, PO Box 1809, Station B, Nashville, Tennessee 37235. Telephone (615) 322-4705.
Appendix A

Meharry Rotation Clinical Tracks

Meharry Cardiology Rotation
Core Responsibilities
* Manage the consult service
* Perform cardiac caths on consult patients
* Pre-read Echoes on consult patients
* Perform TEE on consult patients
* Pre-read stress tests on consult patients
* Triage stress tests
* Complete pre-caths on outpatients
* Prepare EMC Conference on rotation

In addition to the core responsibilities you will choose a supplementary track based on your interests

Invasive Track
* Cath all inpatients and outpatients
* Option to be involved in interventions
* Option to round in CCU when cath schedule allows

Clinical Management Track
* Round in the CCU in addition to consult service
* Perform caths on CCU patients
* Pre-read studies on CCU patients (in addition to consult patients)
* Perform TEE on consult patients
* Option to teach at resident morning report as time allows

Non-invasive Imaging Track
* Pre-read all Echoes
* Pre-read all nuclear studies
* Perform all TEEs
* Read Echoes/stress tests with attendings