Cardiac Catheterization Laboratory
Goals and Objectives – Year I

I. **Educational Purpose:** The fellow will become an important member of the cardiac catheterization laboratory, vital to the performance of the vast array of diagnostic and interventional procedures performed every day. As the fellow progresses in toward competency, the level of participation will progress as well. During the first year, fellows are expected to gain a working understanding of the indications and contraindications to right and left heart catheterization and angiography. They are also expected to develop an understanding of how the techniques are performed and begin to develop these skills under direct supervision.

First year fellows spend two months on rotation in the cardiac catheterization laboratory. At the completion of these first two months of rotation, the first year fellow is expected to achieve competence in all elements of the Pre-Procedural Evaluation, all elements of the Post-Procedural evaluation, manual compression, venous access and Interpretation of Coronary Angiograms. The fellow will be making progress toward competency in the remaining elements of the procedures.

II. **Goals:** Graduates of the Cardiovascular Disease Training Program at the Ochsner Clinic Foundation who have successfully completed rotations in the catheterization laboratory will have spent a minimum of six months and performed in excess of three hundred (300) cardiac catheterization procedures. They will have the knowledge and skills necessary to safely and competently perform these procedures. They will be versed in the indications, contraindications and clinical judgment that is associated with the procedures performed in the catheterization laboratory.

III. **Program Overview:** The cardiac catheterization laboratories of the Ochsner Clinic Foundation Hospital presently consist of four suites all of which are capable of providing imaging of cardiac and peripheral vasculature. The bi-plane laboratory is typically used for pediatric procedures. Annually, over 3000 patients are treated in these laboratories. Procedures can be reviewed in the laboratories or alternatively at one of the numerous review stations located in the department and throughout the hospital and clinic.

Leonard J. Chabert Hospital is a public hospital in the state system. The staff physicians perform diagnostic coronary angiography and peripheral angiography and intervention on a weekly rotation. The diagnostic fellow will accompany the staff physician to Chabert where the team will provide consultative services for general cardiology. Those patients who require invasive angiography will undergo these procedures by the diagnostic fellow under direct supervision of the staff physician. Approximately seventy procedures are done each month in the cath lab at Chabert.

**Research Experience**

The Fellow in Cardiology will have many opportunities to participate in research both during his/her rotation in the catheterization lab, as well as during individual dedicated
research months. A meaningful experience will include discussion of hypothesis and study design, data acquisition, data analysis and submitting the study for peer review.

**Patient Characteristics:**
Fellows will be exposed to adult and geriatric patients of both genders from a wide socioeconomic and racial base.

**IV. Specific Educational Opportunities:** During the course of six months of training in the cardiac catheterization laboratory, the trainee will gain knowledge regarding the indications, contraindications, alternative therapy, complications, that will include but not be limited to the following:

- Radiation physics and safety
- Basic angiography techniques
- Laboratory set-up
- Monitors and standard angiographic equipment
- Injection rates
- Contrast media

**Venous disease**
- Peripheral venous obstruction, thrombosis, and stenosis
- Central venous obstruction, thrombosis, and stenosis
- Pulmonary embolism
- Pulmonary arterial angiography

**Pericardial disease**
- Interpretation of non-invasive test
- Hemodynamic assessment
- Pericardiocentesis
- Surgical role

**Valvular heart disease**
- Interpretation and assessment of non-invasive testing
- Hemodynamic assessment
- Role of surgical management
- Role of percutaneous management

**Peripheral vascular disease (Acute and chronic)**
- Interpretation and assessment of non-invasive test
- Choice of access site and management
- Diagnostic angiography
- Role of endovascular therapy
- Closure devices
- Management of risk factors
- Role of surgical therapy

**Coronary artery disease (Acute and chronic)**
- Interpretation and assessment of non-invasive test
- Diagnostic angiography
- Access options and management
- Hemodynamic assessment
- Pre- and post-procedure care
- Adjunctive pharmacology
- Management of acute myocardial infarction
- Management of cardiogenic shock
- Management of risk factors
- Role of percutaneous management
Role of surgical therapy

V. **Structure and Supervision:** The patients are elective and emergent patients that have been referred from the clinic, emergency room, in-patient services or outside hospitals. The fellows are directly involved in the preoperative evaluation, procedure performance and post-procedural assessment and treatment of their patients.

The fellows work with all of the full time catheterization laboratory staff physicians. The fellows work closely under the supervision of a staff physician and are assigned to partner with that physician for a one-month interval. Fellows are encouraged to work with other staff physicians when the schedule permits, to facilitate their exposure to different operators.

The fellow attends clinic with his catheterization laboratory staff. During this clinic, patients referred for elective outpatient procedures are evaluated by the fellow and discussed individually with the staff physician. In the afternoon, rounds are performed on consulted patients, inpatients and outpatients that have undergone catheterization. The fellow attends his usual continuity clinic.

Trainees are required to attend the core lecture series during the cath lab rotation. The fellows attend conferences scheduled by the Department. The weekly cath. Conference provides an opportunity to present interesting cases, which serve as a background for a short presentation on a related topic in the current literature. This presentation gives them a chance to learn about the disease process, practice oral presentations and receive valuable feedback and teaching from the attending staff.

VII. **Reading Lists and materials:** At the beginning of the rotation and throughout, the trainees are continuously provided with structured reading lists that are updated as the scientific body of evidence grows. The suggested list of educational material includes, but is not limited to:


VIII. **Trainee Evaluation:** Fellows are required to maintain a log of all procedures which will be verified by the attending physician. At the conclusion of each
rotation the attending physician with whom the fellow is rotating will evaluate the fellow’s competency in the elements of the procedure. The fellow’s progress toward competency in the technical and cognitive components will be evaluated. In addition, the fellows will be evaluated in the basic six competencies established by the ACGME. Biannually, the staff physicians of the cath lab and the cath lab director will discuss the progress of each fellow to assure that all are gaining competency appropriately.

**Patient Care:**

**Competency:** Provides compassionate, appropriate, and effective health care.

1) Gathers essential and accurate information about the patient through interviews, examination, and complete history and by appropriately accessing adjunctive sources of information to this obtained from the patient and/or family members.
2) Makes informed diagnostic and therapeutic decisions based on patient information, current scientific evidence, clinical judgment, and patient preference.
3) Carries out patient management plans based on age, diagnosis and psychosocial issues, including, but not limited to, management of patients with ischemic heart disease, congestive heart failure, valvular heart disease, pericardial disease, cardiac transplantation, and disorders of cardiac rhythm.
4) Demonstrates the clinical skills necessary to safely perform and select patients for cardiac catheterization.

**Medical Knowledge:**

**Competency:** Demonstrates knowledge of concepts involved in patient selection for catheterization, contraindications to catheterization, procedural and radiographic safety for catheterization, and interpretation of procedurally derived data.

1) Understand the indications, limitations, complications and medical and surgical implications of the findings at cardiac catheterization and angiography.
2) Understand the pathophysiology of cardiovascular disease and the ability to interpret angiographic data.
3) Obtain a basic understanding of radiation physics, radiation safety, fluoroscopy and radiologic anatomy.

**Practice Based Learning:**

**Competency:** Evaluates each new patient individually and addresses new problems / questions encountered through assimilation of scientific evidence as part of improving care practices.

1) Uses feedback to identify areas for improvement.
2) Seeks opportunities to strengthen deficits in knowledge/skills.
3) Demonstrates initiative in researching current scientific evidence and applying it to problems encountered during daily practice.

**Interpersonal and Communication Skills:**

**Competency:** Demonstrates interpersonal and communication skills that result in effective information exchange with patients, their families and professional associates.

1) Communicate effectively with other members of a multi-disciplinary team, working effectively with others as a leader of the health care team, member or consultant.
2) Maintains comprehensive, timely and legible medical record demonstration and correspondence related to patient care activities.
3) Provides accurate and timely feedback to referring physician.
4) Actively listens and elicits appropriate information from the patient and/or family members and colleagues.
Professionalism:
Competency: Demonstrate commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.

1) Recognizes ethical dilemmas and utilizes / seeks out appropriate consultation where needed.
2) Obtains informed consent from patient and/or family member/legal guardian.
3) Adheres to the laws and rules governing the confidentiality of patient information.
4) Engages in ethical business practices and adheres to the institution's Code of Conduct.

Systems Based Practice:
Competency: Demonstrate awareness and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

1) Understands, accesses, utilizes and evaluates effectiveness of resource providers, and systems to provide optimal cardiac rehabilitation therapy.
2) Understands different medical practice models and delivery systems and how to best utilize them to care for the individual patient.
3) Practices quality, cost-effective health care.
4) Advocates and facilitates patient advancement through the health care system