

ST. LUKE'S EPISCOPAL HOSPITAL/TEXAS HEART INSTITUTE
DIVISION OF CARDIOLOGY
2010-2011 FELLOWSHIP GUIDELINES

2010-11
CARDIOLOGY
FELLOWSHIP
GUIDELINES

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Lines of Responsibility

The lines of responsibility listed below are organized by a general classification of the current service rotations available during cardiovascular sub-specialty training.

Clinical service/consultation

PGY4 – 7: The fellow assigned to a clinical or consultative service will have primary responsibility for patient evaluation and management under the supervision of the attending physician assigned to the rotation. Responsibilities of the fellow in addition to patient management include participation in daily teaching rounds, generation of orders and appropriate documentation.

Supervising Physician (Attending Physician for service): Assignment of patients for care. Supervision of clinical evaluation and management. Provision of verbal and written feedback to the fellowship trainee.

Units

PGY4: The fellow assigned to the coronary care unit rotation has primary responsibility for new admissions to the coronary care unit during working hours from 7:30 am to 4:30 pm. The coronary care unit fellow will also respond to calls for urgent care that include hemodynamic instability, new admission for myocardial infarction and the performance and interpretation of procedures necessary on patients who are currently located in the coronary care unit or destined for transfer there. Procedures performed may include: placement of intra aortic balloon pump, the placement and interpretation of monitoring Swan Ganz catheters, temporary pacing, arterial and central venous lines. The attending physician caring for the patient in question will have primary responsibility for the supervision of procedures and discussion of interpretation of results. The fellow is also responsible for participation in daily teaching rounds with the attending physician assigned to the coronary care unit rotation as well as participation in the non-invasive diagnostic imaging conference that is held each Wednesday morning.

PGY5&6: The responsibility of upper level fellows on the coronary care unit rotation will be in the on-going management of patients on their clinical service who are admitted to the units. Their responsibilities will include daily management decisions and participation in teaching rounds. They will assist in the performance of necessary procedures and interpretation of results providing supervision to the PGY4 fellow and accepting the supervision and guidance of the attending physician.

Supervising Physician (Physician assigned in monthly rotation): Performance of daily didactic teaching rounds and discussion of relevant patient management guidelines. Provision of verbal and written feedback to the fellowship trainee.

Imaging/diagnostic rotations

PGY4: On the imaging and diagnostic services, the PGY4 fellow has primary responsibility for supervision of performance of diagnostic testing that may include treadmill testing, pharmacologic stress testing, echographic imaging and observation of magnetic resonance imaging. The PGY4 fellow is responsible for discussion of the risks and benefits of the planned procedure with the patient.

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PGY4 fellows will assist and learn the techniques and basic knowledge required for image interpretation and report generation with the assistance of upper level fellows and the supervising physicians.

PGY5&6: The upper level fellow assigned to imaging/diagnostic rotations has primary responsibility for the initial image interpretation and preliminary report generation. The responsibilities also include assistance of the PGY4 fellow in performance of necessary diagnostic tests and introduction to the basic knowledge required for interpretation and report generation. During the echocardiography rotation, PGY5&6 fellows are responsible for a discussion of the risk/benefit of requested transesophageal echo studies with the patient. They are responsible for preparation of the patient and performance of the necessary diagnostic study under the supervision of the attending echo physician.

Supervising Physician (Imaging laboratory director): Supervision of relevant imaging laboratory and ancillary care personnel. Performance of daily didactic teaching rounds and discussion of image interpretation. Performance of at least one didactic lecture on imaging technique or interpretation. Provision of verbal and written feedback to the fellowship trainee

Catheterization Laboratory

PGY4 – 7: The responsibilities of the fellow assigned to a catheterization laboratory rotation are the assistance of the performance of necessary procedures with responsibilities for basic procedures attendant to their level of training and expertise. They will learn the necessary techniques for the performance of safe and effective cardiac catheterization and hemodynamic manipulation. They will be responsible for primary image interpretation and the generation of a preliminary report. Final reports and review of procedure performance and management decisions are the responsibility of the supervising physician.

Supervising Physician (Attending Physician): Assignment of patients for care. Supervision of procedure performance with assignment of fellow duties attendant to level of training and expertise. Oversight and instruction in result interpretation and reporting. Provision of verbal and written feedback to the fellowship trainee.

Outpatient clinic rotation

PGY4 – 7: During the ½ day weekly outpatient clinic, the fellow is responsible for primary patient evaluation and management decisions on new patients as well as those scheduled for on-going follow-up and continuity of care. Patient evaluation and management decisions will be reviewed with the supervising physician. The fellow is responsible for necessary chart documentation.

Supervising Physician (Attending Physician for clinic): Assignment of patients for care. Supervision of clinical evaluation and management. Provision of verbal and written feedback to the fellowship trainee.

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Research

PGY4: The PGY4 fellow is responsible for the choice of a physician mentor who will assist in developing or associating the fellow with an ongoing or planned research project. The fellow is responsible for learning the necessary techniques and statistical knowledge base required to perform a research project. By the end of the PGY4 year, the fellow is expected to generate ideas for a new research project.

PGY5&6: Upper level fellows are responsible for performance of on-going projects and generation of new research projects when appropriate. They will be assisted by their mentor/supervising physician in arranging funding and pursuing the publication of research projects in a peer reviewed journal.

Supervising Physician (Assistant Director of Cardiology Research): Coordination of ongoing research. Supervision of research staff and assistance with practical matters of research in planning or operation.

Mentor: provision of guidance in development, funding, completion and publication of fellow research.

Call duty

PGY4: Call duty during the PGY4 year consists of primary responsibility to the coronary care unit. This includes the admission of patients who have been assigned to the coronary care unit. Additional responsibilities include response to calls to resuscitation from cardiovascular collapse and urgent care management for hemodynamic instability. They are responsible for the performance of necessary, emergency procedures and interpretation of results with the advice or supervision of the attending physician.

PGY5&6: Upper level fellows are responsible on-call duty that occurs approximately three times monthly. The primary duty is performance of initial evaluation of patients referred to the chest pain evaluation unit. This responsibility includes performance of the initial history and physical examination, appropriate documentation and development of a diagnostic plan. These duties are carried out with the advice and supervision of the patient's attending physician. In addition, the upper level fellow has primary responsibility for the initial management of ST-segment elevation myocardial infarction that is recognized in the emergency center or in the hospital setting outside the coronary care unit. This responsibility includes the initial clinical evaluation and the development of a diagnostic plan, administration of medical therapy including thrombolytic drugs or the coordination of urgent transfer to the cardiac catheterization laboratory for primary revascularization. In the course of the initial evaluation of ST elevation myocardial infarction, the upper level fellow may be required to assist or be responsible for resuscitation from cardiovascular collapse secondary to ventricular dysrhythmia or heart block and may be required to assist or perform placement of intra aortic balloon pump, temporary pacemaker, arterial line or Swan Ganz monitoring catheter. The duties of the upper level fellow on-call do not include assistance with the performance of an initial diagnostic cardiac catheterization or revascularization procedure upon the patient with ST segment elevation myocardial infarction. All patient management decisions are discussed with the attending physician

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responsible for the patient in question.

Supervising Physician (Attending Physician): Assignment of patients for care. Supervision of clinical evaluation and management. Provision of verbal feedback to the fellowship trainee.

Responsibility for "non-teaching" patients

In the event of life threatening emergency, the responsibility of the Cardiology resident will apply to patients of "teaching" and "non-teaching" physicians alike.

In the event that the Cardiology Resident disagrees with the management plan of the attending physician, the attending physician will be responsible for all subsequent management decisions, orders and examinations that are deemed necessary.

In the absence of life threatening emergency, the non-teaching attending is responsible for all examinations and management decisions for his/her patient.

Electrophysiology Training Lines of Responsibility

PGY 7 & PGY 8

Fellow is responsible for:

- 1) Pre-procedure evaluation of outpatients arriving for procedures on weekdays.
- 2) Participation in teaching rounds.
- 3) Performance under supervision of EP related procedures.
- 4) Management and care of patients following procedures.
- 5) Generation of a complete thought process and formulation of treatment options in preparing a comprehensive EP report.
- 6) Performing, analyzing and discussing tilt test, pacemaker and ICD testing and trouble shooting as well as other non-invasive EP testing.
- 7) Attending ½ day/wk continuity clinic.
- 8) Preparing case studies, conferences and Journal clubs.
- 9) Participating in research project.
- 10) Interact, teach, and serve as consultant to lower level cardiology fellows.

Responsibility for non-teaching patients

When a physician caring for a non-teaching patient requests an EP consult from the EP Teaching faculty, then that patient becomes "teaching" for the reasons and problem for which a consult was requested.

Under the above circumstances, the CCEP fellow will respond and attend EP emergencies of such patient. CCEP fellow will follow and manage any post EP procedure care of such patient.

The CCEP fellow does not carry a code beeper and is not required to answer for such calls.

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In all other instances, the CCEP fellow has no role or responsibility towards non-teaching patients but will provide emergency medical treatment if he encounters such patient in the hospital.

Supervising Physician (EP Attending Physician): Assignment of patients for care. Supervision of clinical evaluation and management. Provision of verbal feedback to the EP fellowship trainee.

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ROTATIONS

A. Clinical Rotations

1. Work up all assigned admissions to the section. On sections to which a resident or student is assigned, and where he or she has performed the primary admission history and physical, the Fellow's note will be a brief cardiology resume.
2. Assist in all catheterizations on the section as time and responsibilities permit. All cath data should be completed by the Fellow.
3. Follow all patients on the section throughout hospitalization -- however, the degree of Fellow participation will vary, depending on the rotation.
4. At the time of patient's discharge from the hospital, on certain rotations, a dictation summary of the hospital care may be required. The summary should be in your name and that of the attending physician, indicating copies to appropriate surgical consults and referring physician. (See Dictation Procedures for more information.)
5. Participate in ECG interpretation with the group to which the Fellow is assigned. The schedule for ECG interpretation is posted in the ECG reading room. All tracings interpreted by the fellow must be labeled with his/her Baylor identification number in order to be credited for that interpretation.

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B. CCU, ICU, ECG Rotation

1. Goals
 - a. Proficiency in the management of unstable angina, Acute Myocardial Infarction and its complications.
 - b. Proficiency in indications, contraindications, complications, and efficacy of interventions in acute coronary syndromes.
 - c. Proficiency in bedside hemodynamic monitoring.
 - d. Proficiency in interpretation and management of arrhythmias.
2. Responsibility
 - a. Assignment is primarily in the CCU-ICU area. The Fellow is responsible for acute cardiac care, which will include management of acute myocardial infarction and its complications, bedside hemodynamic monitoring, interpretation of arrhythmias, and intracavitary rhythm recordings. Responsibility includes all other CCU patient management as well, as good medical care dictates.
 - b. Respond to the Stemi pager from 7:00am – 7:00pm on weekdays and stay with the patient until relieved by attending, IV fellow, CL staff, etc. If time allows, on weekends and also from 7:00pm – 7:00am; Fellows may participate in Stemi work-up.
 - c. Admission notes are to be made on each patient admitted to CCU by the CCU fellow. Admissions by service which have a fellow should be handled by that fellow unless he is unavailable (cath lab, etc).
 - d. Rounds on selected patients will be made with the staff M.D. who is assigned to CCU for the month.
 - e. Receive status reports on acute patient changes from CCU Nursing Staff and initiate appropriate changes in therapy, if required.
 - f. Attend the bi-monthly meetings of the CCU committee.
 - g. Assigned to carry the Code Blue beeper and serve as the cardiology consultant to the code team for the time period 7:30 a.m. to 4:30 p.m. The Blue medicine resident has primary responsibility as code leader in codes outside the CCU.

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- h. Prepare the Pathology Conference for Thursday at 4:00 p.m. Interpret ECG tracings as assigned.
- i. Transesophageal recording and pacing (see call)
- j. Attend monthly CCU Quality Enhancement Committee Meeting, 2nd Tuesday of each month, in the Executive Board Room on the 5th floor.
- k. Attend monthly CPR Committee Meeting held 1st Tuesday, every other month beginning in February at 7:00 am in G169.
- l. Supervision of central venous lines and arterial line insertion by medicine residents if such supervision is requested.

Note: Patients admitted to CCU/ICU by general internists or by non-teaching doctors are not covered by the CCU Fellow (except for emergency care).

3. CCU Attending responsibilities:

- a. A member of the Teaching Faculty is assigned to serve as the CCU attending for one-month duration. The CCU fellow and attending will be notified on the first day of the month by the Fellowship Office. The assignment roster is published annually (July through June).
- b. Will be available on a daily basis, at a predetermined time, to serve as a consultant to the CCU Fellow for discussion of selected patients and to review interesting electrocardiograms.
- c. Meet for one hour, three times weekly, with the CCU Fellow to specifically review topics in the "CCU – Fellows' Learning Syllabus", including the ACC/AHA Guidelines for the Management of Acute Myocardial Infarction. Three hours per week will permit covering of all of the syllabus material each month.

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C. St. Luke's Medical Tower (OMT) Rotation - Clinical Responsibilities

General: The "OMT" rotation has been designed to establish your competency in the practical aspects of noninvasive cardiology testing in the outpatient setting. Areas of study include: Echocardiography, Treadmill stress testing, MV02 testing, pharmacological stress testing, T-wave Alternans, and Cardiac Rehabilitation. Your teachers will be the medical and technical staff actually performing these evaluations.

Orientation: Your primary contact and supervisor is Sharon Broussard, Assistant Director of Noninvasive Cardiology/Cardiac Rehabilitation. Individuals reporting to her have been instructed to guide you in each of the testing areas.

Reading material: Appropriate text books are available. Computer with full internet access is available in the OMT lab for accessing published training guidelines, the medical literature and completing academic assignments.

Medical Staff Coverage: For individual tests, a reading roster is maintained by the management of Noninvasive cardiology. "Roster" doctors will over read exams and returned sign off's should be reviewed. Call this doctor if questions. Echocardiography: several of the echocardiography medical staff have been assigned routine reading days during the month. Formal echo readouts are not daily occurrences and the readout time may vary. *Work closely with Staff to make sure that these sessions are set up in advance with the doctor so that the time is adhered to and studies are pre-read or changes in schedule are noted.*

Evaluation: The attending of the month will perform a mid-month and end of month review. The OMT Assistant Director and staff maintain check off lists of goal for the month which can be reviewed.

- Cardiac Rehabilitation: A check off style evaluation sheet should be completed during the month.
- Echocardiography: Work with the echo analyst and sonographer for basic scanning in interpretation. Medical staff will evaluate directly. Fellows should save print out copies of their preliminary HeartLab interpretations to be subsequently compared with finalized (over read) staff interpretations in the event that one-on-one review is not possible.
- Stress testing: A check off style evaluation sheet should be completed during the month.

Policies:

1. Provide physician coverage on the Noninvasive Cardiology testing floor, including Cardiac Rehab, during OMT business hours.
2. Respond to all "Code Blue" calls on the 9th, 10th, and 11th floor.
3. Evaluate patients in the Noninvasive Cardiology testing areas as requested by area staff.

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4. Assist in the admission of all patients to St. Luke's Episcopal Hospital from Noninvasive Cardiology and Cardiac Rehab.

Pharmacological Stress Testing

2. Assist and back-up nurse administering I.V. dipyridamole for nuclear cardiology stress testing.
3. Adhere to written guidelines and policies provided by OMT Management.

Exercise Lab

1. Work closely with the Nurses, exercise physiologists and the nuclear medicine technologists.
2. Review patients' clinical data to rule out contraindications to testing.
3. Act as a leader during exercise testing and assist in patient monitoring.
4. Perform patient evaluations pre-, during or post exercise as requested by the staff.
5. Provide a preliminary interpretation for each exercise ECG tests performed
6. Review attending physician's final interpretation for each exercise test.
7. Set aside "problem" or interesting cases for review with cardiology staff.
8. Contact Dr. Stainback (529-5530/pager 10492) or any of the teaching staff for advice regarding difficult clinical situations.

Cardiac Rehabilitation

1. Remain on the 11th floor during all exercise sessions.
(Sessions begin at 7:30 A.M. on Monday, Wednesday, and Thursday and 8:00 A.M. on Tuesday and Friday)
2. Review rehab patients' charts with the staff on a weekly basis.
3. Present one patient education class for participants each month.
4. Interact with patients as schedule allows.

Echocardiography

1. Observe echo examinations and interpretations.
2. Perform IV saline contrast or Echo contrast agent injections for the sonographer if needed.
3. Performing & interpreting echocardiograms: Learn basic echo exam with the sonographer and do preliminary interpretation. Proficiently performing and interpreting ≥ 60 2D & Doppler exams over the course of 2 months on the tower rotation will credit you with one month of echocardiography for level II or II + echo. This extra month of echo does not count towards 3 mo's total needed for level I or for 12 mo's total for level III (although you may still apply the numbers of studies performed and interpreted for your totals in those cases).
4. Prepare noon noninvasive conferences as requested by Chief Cardiology Fellow.

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**Echocardiography Course Description:
Levels 1, 2 & 3**

A. INTRODUCTION

Our program observes the three training levels described in the *ACC/AHA Clinical Competence Statement on Echocardiography*, JACC Vol. 41 (4) 2003. In order to obtain an adequate case mix, fellows should generally exceed the minimum case number requirements for an ideal training experience. Trainees must learn to perform complete and technically adequate echo exams from start to finish. Moreover, the echo exam should adequately answer the clinical question at hand. Reporting should be timely and convey not only the objective data, but provide appropriate synthesis that is practical for clinical management. Critical results should be transmitted physician-to-physician. Trainees should communicate important echo findings to the responsible echo medical staff and referring physicians with the proper level of urgency and decorum. Lab protocols, standards and accreditation requirements are emerging requirements that are incorporated into the program.

B. LEARNING OBJECTIVES & EXPECTATIONS

1. Exam indication and appropriateness (chart review, H& P)
2. Correlate physical exam findings (auscultation)
3. Technical ability (scanning)
4. Interpretation—independent pre-reads with staff over read.
5. Reporting: timely, concise, provides synthesis
6. Patient care: Echo trainees must always be available in the lab
 - 6.1. Examine and treat patients experiencing symptoms or instability
 - 6.2. Inject contrast for techs when RN's not able (certain floors)
 - 6.3. Other patient care activities, back up for stress lab
7. Q/A measures (participation by all level trainees required)
 - 7.1. Echo-MRI correlation conference
 - 7.1.1. alternate Wednesdays 8:00 AM—MRI reading room, radiology, B1
 - 7.1.2. Prepare cases in advance
 - 7.1.3. Complete correlation sheets—work with Leticia .
 - 7.2. Stress Echo review conference
 - 7.2.1. alternate Thursdays 1:00 PM—echo reading room
 - 7.2.2. Prepare cases in advance
 - 7.2.3. Complete correlation sheets—deliver to Sue Maisey, Manager
 - 7.3. "Critical results" notification data (echo worksheet and final report summary)
8. Lab Policies for patient safety, procedures, reporting and accreditation.
 - 8.1. General SLEH and Joint Commission policies
 - 8.1.1. Contact =Elizabeth Phashe, RN (supervisor)—documentation & consent.
 - 8.2. Intersocietal Commission for the Accreditation of Echo Laboratories (ICAEL).
 - 8.2.1. Contact =Sue Maisey, Manager
 - 8.3. "Stat" or on call exam issues
 - 8.3.1. Contact = echo tech on call

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- 8.3.2. Contact = Upper level echo fellow on call
- 8.3.3. Contact = Medical Director or designee / on call medical staff
- 9. Learning
 - 9.1. Scanning—one on one with techs progressing to independent scanning
 - 9.2. Review scanned exams with medical staff
 - 9.3. Reading—ongoing, see text list, below & online resources available in lab.
 - 9.4. Lectures—attend comprehensive year long bi-monthly noon echo lecture series
 - 9.5. Physics of ultrasound lecture series (6 hours, April/May) times TBA
 - 9.6. Daily read out sessions with assigned medical staff
 - 9.7. Journal Club—fellow directed
- 10. Feedback & Evaluation
 - 10.1. Fellow evaluation forms
 - 10.2. Meet with medical director whenever needed
 - 10.3. Schedule formal review with medical director mid and end of rotation mo.
 - 10.4. Level 3 trainees should discuss lab issues frequently with medical director.
 - 10.5. Discuss progress or concerns with any of the teaching medical staff
 - 10.6. In service examination

C. LAB HOURS

Echo fellows should report to the lab by 7:30AM. Special procedures begin at 7:30 AM (nurses arrive at 7:00AM). Begin finalizing exam reports from the night before ASAP.

D. TRAINING LEVELS

Level 1

- Minimum training months: 3
- Minimum performed surface echo exams: 75
- Minimum interpreted surface echo exams: 150

This level of training is introductory and provides basic scanning and interpretation skills for most common cardiovascular pathology. Level 1 training is needed in order to be “board eligible” for cardiovascular disease certification. Level 1 is not considered adequate training for independent interpretation of surface echocardiograms or for becoming eligible as a medical staff member in an ICAEL-accredited lab. *Note: The St. Luke’s Medical Tower clinical rotation may be count towards echo training. If, over two months in the tower echo lab a fellow performs and interprets a significant number of exams (> 60 performed and interpreted) with feedback, the trainee will earn the equivalent of 1 month echo training. Discuss with medical director at 2 & 5 month review meeting.*

Level 2 Transthoracic Echo

- Minimum cumulative training months: 6
- Minimum performed surface echo exams: 150 (75 additional)
- Min. interpreted surface echo exams: 300 (150 additional)

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This training level should provide the skills necessary for independent interpretation of a broad spectrum of cardiovascular pathology, including commonly encountered congenital heart disease using standard techniques, including echo contrast agents. For advanced techniques, complex congenital and unusual cases, the back up of a level 3 echocardiographer may be needed. Note: **ICAEL echo lab accreditation standards:** medical staff members must have level 2 training or above. Echo lab medical director: Medical Director: Level III echo desirable. If level 2, passing the NBE ASCexam (www.echoboard.org) is highly recommended (ICAEL future directions)

Level 2 + Stress Echo:

Stress echo certification requires level 2 transthoracic echo training (6 mo's). However, the stress echo experience may begin at any time. A Level 1 trainee may not independently perform or supervise a stress echo in our lab. With prior experience and medical staff approval, Level 2 and Level 3 trainees may supervise and perform stress echos independently. *Note: Fellows must not discuss stress echo results with a patient or family until interpretation and approval by the responsible medical staff member.*

- Minimum cumulative training months 6 (level 2)
- Minimum SE performed + interpreted: 100

Level 2 + TEE

TEE: Permission from the Medical Director is required. A list of approved TEE trainees will be provided to the nursing and medical staff. Training may begin only after the trainee has met level 2 requirements (150 TTE performed and 300 interpreted) and no sooner than the 5th month of training. For THI fellows, TEE examinations performed at other hospitals may not be applied towards TEE credentialing numbers. Note: Medical Staff should be present for probe insertion and exam.

- Minimum cumulative training months: 8
- esophageal intubations, gastroscope 5 (GI service—Dr. L. Hochman)
- Min. TEE's performed and interpreted: 50 (single operator with probe insertion)

TEE skills can be easily acquired by most operators with the minimum recommended number of exams (50). Excellence in TEE requires an extensive base of surface echo knowledge and experience in addition to a strong case mix. In our experience, 50 TEE's does not provide an adequate case mix. Patient volumes generally allow > 100 exams per trainee even when starting TEE's after the 5th month of echo training.

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Level 3

- Minimum cumulative echo months 12
- Consecutive months in the lab 6 month stretch desirable (run the lab)
- TEE's performed & interpreted ≥ 50 (300 ideal + intraop)
- SE's performed & interpreted ≥ 100
- All exams performed (TTE, TEE, SE) 300 (150 additional)
- All exams interpreted 750 (450 additional)
- Significant exposure to adult congenital (may rotate for 1 mo on pedi echo, TCH)
- Know special techniques: contrast, 3D, parametric modalities, emerging
- Work on approved echo-related research project
- Supervise lab personnel
- Teach junior trainees
- Coordinate lab special procedure schedule
- Coordinate lab Q/A meetings
- Coordinate sonographer clinical lecture series (bi-monthly by fellow)
- NBE comprehensive certification (ASCeXAM)—recommended
- Work closely with medical director

Level 3 trainees should be proficient in performance, interpretation and *teaching* of standard surface echoardiograms, stress echos and TEE's. Case mix should include the broad spectrum of cardiovascular pathology. Special techniques should be learned. An echo-related research project should be started early on with a publication draft submitted prior to departure. The level 3 trainee completing our program should be able to "run" a tertiary cardiovascular center teaching echo lab.

Perioperative TEE:

This unique experience is available for cardiology trainees at the THI. Because experienced cardiologists may be called upon for back up in complex intraoperative cases, all level 3 and interested level 2 + TEE trainees are strongly encouraged to gain additional intraoperative TEE experience. The laboratory participates in the training of cardiovascular anesthesiology fellows for perioperative NBE TEE certification. For anesthesiologists, this requires "study" of 300 TEE case of which 150 must be both performed and interpreted by the trainee. Cardiology fellows' mentoring of CV anesthesiology fellows on shared cases has proven to be invaluable for their learning. There are no formally accepted cardiology trainee intraoperative TEE training guidelines. Cases should be supervised by the cardiology service medical staff. CV anesthesia fellows setting up each case should be instructed to page the cardiology TEE fellow for participation. A separate Perioperative TEE experience can be noted (if appropriately documented) on a trainee's final certification letter.

E. READING LIST

Text books:

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Feigenbaum's Echocardiography, 7th edition (2009)

The Echo Manual, 3rd Edition (2006)

Jae K. Oh, MD & James B. Seward, MD

Cardiovascular Medicine, 3rd Edition (2007)

Willerson JT, Cohn JN, Wellens HJJ, Holmes DR, editors

Chapters:

- 5 Intro to Echo: Stainback, MD
- 9 Normal and abnormal anatomy, Anderson & Becker, MD's
- 11 Echo adult congenital, Kovach, MD
- 21 Echo evaluation of valvular heart disease, Stainback, MD
- 35 Echo evaluation of CAD, Coulter, MD
- 61 Echo in cardiomyopathies, Coulter, MD

Other, required reading:

American Society of Echocardiography Guidelines and Standards

(www.asecho.org)

- Echo appropriate use (AU) criteria, 2007, update 2010
- ACCF Task Force 4, training in echo. 2008
- Stress Echo 2007
- 3D echo 2007
- Contrast echo 2008
- Prosthetic valve 2009
- Valve Stenosis 2009
- Valve regurgitation 2003
- Diastolic function 2009

Understanding Ultrasound Physics: Fundamentals and Exam Review (2004)

Sidney K. Edelman, PhD

(Content covered in winter THI "Physics of Ultrasound lecture series" by Sid)

F. NOON ECHO LECTURE SERIES

(Alternate Tuesdays; Consult Cardiology Noon Conf Schedule for dates)

G. In service exam: Beginning in 2011, this exam will be given to all fellows during May of each year of fellowship. Questions will cover only the most basic and clinically important material and will be derived only from the reading material noted above. Questions will vary somewhat each year as they are derived from a question database. The goal is primarily to provide meaningful self assessment in preparation for general clinical cardiology practice and to encourage echo reading throughout fellowship.

H. Evaluations: Monthly evaluation forms will be completed by Dr. Stainback after his

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consultation with Dr's Coulter, Navarijo and other echo medical staff (interpretation completeness, accuracy, fund of knowledge)

Elizabeth Phashe, RN—clinical components of lab presence

Kimberly Moore, RDCS—scanning numbers and skills

Leticia Vasquez, RDCS—participation in Echo/MRI/CT correlation

Monthly Check off list for echo lab fellows:

- Competence in HeartLab reporting (analysts or MD's if question)
- Echo Report "cheat sheet" consult for complete reports
- Scanning: complete scan cards, review numbers with Kimberly Moore
- Echo/MRI/CT: consult with Leticia Vasquez on conference dates
- Consult with other fellows to identify holes in echo lab coverage
- IV saline, echo contrast and Amyl Nitrate administration: confirm skills with Elizabeth Pashe, RN
- Review echo evaluation sheet with Dr. Stainback

On Call issues:

- Stat Echos: these studies preempt other responsibilities of the sonographer or fellow covering the echo lab and results must immediately be transmitted to the physician that ordered the echo.
- Fellows may not perform echo exams to be used for clinical decision-making at any time without also recording the images and creating a report that can be evaluated the echo medical staff. Therefore, the CCU fellow on call must be competent in performing and echocardiogram from start (ie, entering all patient demographics) to finish (creating a report in HeartLab after downloading images). If the fellow is not competent in all areas of scanning and archival, he/she must call the echo tech or another fellow to do the exam unless it is an urgent life-treating situation (eg, quick look to rule out large pericardial effusion) in which case a follow up examination is to be completed and documented as well.

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NUCLEAR MEDICINE DEPARTMENT OVERVIEW

The Nuclear Medicine Department (the Department) of St. Luke's Episcopal Hospital (SLEH, the Hospital) operates three imaging laboratories: General Nuclear Medicine on the 26th floor of the Hospital, Cardiovascular Nuclear Medicine (CVNM) on the 3rd floor of the Hospital, and Outpatient Nuclear Medicine (primarily cardiac) on the 11th floor of the O'Quinn Medical Tower (SLMT or OQMT). The Department also serves the Texas Heart Institute (THI). The Department is staffed by nuclear medicine physicians and scientists who are members of the Nuclear Medicine Section of the Department of Radiology of Baylor College of Medicine (BCM, Baylor) and who make up the majority of the Hospital's Nuclear Medicine Service and by technologists and other support personnel who are Hospital employees. Members of the faculty also provide certain nuclear medicine services at St. Luke's Hospital - The Woodlands (SLW), Texas Children's Hospital (TCH), PET Imaging of Houston (PIH), and other facilities.

Members of the Nuclear Medicine Section faculty who are active at SLEH/THI include:

--Anupa Arora, M.D., MPH

Dr. Arora is a staff nuclear medicine physician. She is certified by ABNM and CBNC.

--Patrick Ford, M.D.

Dr. Ford is Associate Chief of the Nuclear Medicine Service. He is certified by ABNM and CBNC and is a Clinical Assistant Professor of Radiology.

--Ed Giles, M.S.

Mr. Giles is the Radiation Safety Officer at SLEH/THI. He is certified by the American Board of Radiology in Diagnostic Radiologic Physics and the American Board of Science in Nuclear Medicine. He is an Instructor of Radiology.

--Warren Moore, M.D.

Dr. Moore is Chief of the Nuclear Medicine Service and Director of CVNM. He is certified by ABIM, ABNM, and CBNC and is an Associate Professor of Radiology.

Other Department personnel you may encounter include technologists and clerical staff members, and particularly

--Leticia Alanis-Williams, B.S., RT(N), CNMT; Nuclear Medicine Manager

--Randy Barker, B.S., RT(R), RT(N), CNMT; Technologist Supervisor for General Imaging

--Leon Brown; Radiation Safety Technician

--Cindy Gentry, B.S., CNMT; Nuclear Medicine Quality Coordinator

--Marly Gonzalez, B.S., CNMT; Technologist Supervisor for CVNM

--Joe Knisel, M.S.; Nuclear Medicine Information Systems Manager

Routine diagnostic and therapeutic nuclear medicine services are available in the SLEH laboratories, 8 a.m. to 5 p.m., Monday–Friday except for official Hospital holidays. Myocardial perfusion studies for the Cardiac Observation Unit and for observation (POS) patients are available 8 a.m. to 10 p.m. Monday-Friday and 8 a.m. to 8 p.m. Saturday and Sunday, except for official Hospital holidays. Studies are performed in the SLMT on a variable schedule. Otherwise, most medically urgent nuclear medicine services are available 24 hours/day, 7 days/week on an on-call basis and can be arranged by

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contacting the Nuclear Medicine Department (832-355-3126 during regular hours) or the Nuclear Medicine technologist or physician on call through the Hospital page operator (832-355-4146). Certain nuclear medicine procedures can be performed at the patient's bedside in the ICUs, but there are significant regulatory and technological restrictions on some of these studies. Because the quality of the study is usually much better when performed with fixed-base cameras in one of the Department's laboratories, "portable" or "bedside" studies should only be ordered when it is really medically necessary that the patient not be moved from the ICU. If the order for the study does not specifically indicate that the study is to be performed in the ICU, the patient will be brought to the Nuclear Medicine laboratory. A summary of available tests, indications, physiologic mechanisms, and patient preparations is available in the publication, "Nuclear Medicine Department Reference Manual," online via the SLEH "Source."

Interpretations of SLEH/SLMT nuclear medicine studies are available on the day the study is completed. Reports are usually available through the Hospital Information System (HIS) as soon as they are read. During regular business hours, reports are also available in the Nuclear Medicine Department office (Y2614) or by calling 832-355-2270. Any physician with a question regarding nuclear medicine services in general or regarding a particular patient or clinical problem is encouraged to contact a Nuclear Medicine physician.

NUCLEAR MEDICINE DEPARTMENT CONTACTS

Main number.....	832-355-3126
General Nuclear Medicine (26 th fl, SLEH).....	832-355-2272
Cardiovascular Nuclear Medicine (3 rd fl, SLEH).....	832-355-3732
Outpatient Nuclear Medicine (11 th fl, SLMT).....	832-355-8201
Radiation Safety Office (Y2611).....	832-355-3141
Reports (8-5, M-F).....	832-355-2270
Leticia Alanis-Williams, B.S.(Y2601A).....	832-355-2692
Anupa Arora, MD, MPH (Y2618C).....	832-355-3126
Randy Barker, B.S. (Y2660).....	832-355-8927
Leon Brown (Y2611D).....	832-355-4948
Patrick Ford, M.D (Y2618E).....	832-355-2065
Cindy Gentry, B.S (Y2601D).....	832-355-6448
Ed Giles, M.S (Y2611C).....	832-355-4949
Marly Gonzalez, B.S (P327).....	832-355-3806
Joe Knisel, M.S (Y2621B).....	832-355-3884
Warren Moore, M.D (Y2601B).....	832-355-3126

DEPARTMENT MISSION

The mission of the Nuclear Medicine Department of St. Luke's Episcopal Hospital is to provide high quality diagnostic, therapeutic, and consultative nuclear medicine services for patients and physicians at the Hospital and its Medical Tower and to promote the science and practice of nuclear medicine by providing educational opportunities for trainees in

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nuclear medicine and by participation in research involving the use of non-sealed sources of radioactive materials.

EDUCATIONAL SCOPE

The educational portion of the Department's mission specifically includes the education of health care providers and others in various aspects of nuclear medicine. In accomplishing this mission, members of the Service and the Department routinely participate in Baylor College of Medicine training programs for medical students, residents, and fellows and in the Houston Community College Nuclear Medicine Technology Program. From time to time, trainees from other institutions, private practitioners, commercial representatives, and members of the public may also be present in the Department and attend interpretation and other teaching sessions.

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OVERVIEW OF CARDIAC NUCLEAR MEDICINE TRAINING

American Board of Internal Medicine certification in Cardiovascular Diseases requires "competence in the interpretation of radionuclide procedures." For SLEH/THI Cardiology fellows, this is achieved by a combination of didactic lectures and practical training and experience. Specific goals, objectives, and curricula have been developed for each monthly nuclear cardiology rotation and will be reviewed with the fellow at the beginning of each rotation.

Didactic Lectures: The Core Lecture Series includes a brief overview of the most commonly used techniques in cardiac nuclear medicine including perfusion and functional imaging. Additional topics are covered in review sessions during Nuclear Cardiology rotations and with case presentations in the Nuclear Cardiology portion of the Noninvasive Cardiology lecture series.

Nuclear Medicine 1: All fellows in the SLEH/THI Cardiology program complete two one-month rotations in the CVNM Laboratory. These collectively constitute the "Nuclear Cardiology 1" (Nuc 1) rotation. Faculty review sessions are available during the Nuc 1 rotation. A structured text reading and written quiz schedule over both months is required. Practical experience in procedure performance and interpretation is also obtained during the rotation. This clinical rotation, in conjunction with didactic lectures, allows the fellow to develop an understanding of the applications, advantages, and pitfalls of radioisotope imaging as they apply to patients with known or possible cardiac disease. Together, these activities meet the requirements of (a) the Accreditation Council for Graduate Medical Education – Residency Review Committee for Cardiovascular Disease (ACGME-RRC-CD) for training of cardiology fellows in nuclear cardiology, (b) the American College of Cardiology (ACC) "COCATS 2" (2/2006 revision) Level 1 training for radioisotope imaging ("Basic training required of all trainees to be competent consultant cardiologists (and) conversant with the field of nuclear cardiology for application in general clinical management of cardiovascular patients"), and (c) the American Board of Internal Medicine for eligibility for the Cardiovascular Disease subspecialty examination. This level of training will not meet the requirements for licensure to use radioactive materials and will not provide eligibility for the Certification Board of Nuclear Cardiology (CBNC) examination.

Nuclear Medicine 2: Fellows seeking authorized user (AU) physician status on a radioactive materials (RAM) license and/or CBNC certification will require additional training after completion of the Nuc 1 rotation. The portion of this additional training performed at SLEH is designated collectively as the "Nuclear Cardiology 2" (Nuc 2) rotation and includes a minimum of 3 additional one-month clinical rotations in CVNM, a research project, and certain other tasks described in detail in the Nuc 2 rotation manual. A didactic training course in basic sciences is also required but is not provided as a part of the Cardiology fellowship.

Any fellow who wishes to become an authorized user for radioactive materials (RAM) must

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achieve at least ACC Level 2 training (“Additional training in (a specialized area) that enables the cardiologist to perform (and/or) interpret...specific procedures at an intermediate skill level...”) and the fellow should contact the Director of CVNM (Dr. Warren Moore, 832-355-3126) no later than the spring of the first year of fellowship to discuss the requirements for such licensure. Official regulations vary from state to state and are subject to change at any time. Current minimum requirements for licensure in Texas include at least 80 hours of didactic training (not provided by SLEH/THI) in basic sciences related to the use of nonsealed radioactive materials and approximately 620 hours of clinical training in the Nuclear Medicine Department (for a minimum total of 700 hours). This additional training that is required for RAM licensure is not a required part of the fellowship, and acceptance for such training is not guaranteed (due to space, personal performance, and other considerations). Five 1-month CVNM clinical assignments (Nuc 1 plus Nuc 2), a research project, and other local requirements exist for ACC Level 2 training at SLEH. Depending on federal and state guidelines, local requirements, and the fellow's exact rotation schedule, limits exist on leave and absences during nuclear medicine rotations. (For example, fellows seeking to meet Level 2 criteria should not plan to exceed a total of 15 days of absence (for any reason except clinic and post-call periods) during the five clinical months and should not plan to take more than 1 week of vacation or other leave during the fifth month. Fellows exceeding these limits may require additional clinical months to meet licensure hour requirements, and the availability of this training at SLEH is not guaranteed.

Nuclear Medicine 3: Any fellow who wishes to pursue ACC Level 3 training (“advanced training (which enables) a cardiologist to perform, interpret, and train others to perform and interpret specific procedures at a high skill level” and “sufficient to pursue an academic career or direct a nuclear cardiology laboratory”) will be required to complete 12 months of training in cardiac nuclear medicine. Fellows interested in this option should contact Dr. Moore as early as possible in the course of the fellowship to discuss this matter in detail. A maximum of one Level 3 position is available, and requests may come from inside or outside of Baylor.

PURPOSES, GOALS, and OBJECTIVES

PURPOSES: There are two purposes for the Nuc I rotation in the Cardiovascular Nuclear Medicine (CVNM) Laboratory at SLEH: patient safety and trainee education.

1. The Nuc 1 Cardiology fellow, as the representative of the Cardiology Section, is responsible for the immediate medical safety of patients being examined in the CVNM Laboratory during regular hours. (After-hours coverage is provided by the fellow covering the Cardiac Observation Unit or others.) This applies primarily to patients undergoing stress tests, but includes all patients who may be seen in the laboratory.
2. The Nuc 1 Cardiology fellow, as a trainee/learner in the Nuclear Medicine Department, has an opportunity and responsibility to learn about test procedures and clinical applications of cardiac nuclear medicine.

GOALS: The goals of the Nuc 1 rotation are directed at the fulfillment of the purposes listed above. While patient safety is of great importance, knowledge and skills related to that part

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of the overall purpose of the rotation are under the auspices of the Cardiology Section and are addressed in many parts of the fellowship. Training in stress testing and management of general patient safety is therefore not a major educational focus of the nuclear medicine faculty during the rotation. Accordingly, the goals and objectives of the rotation described here are heavily weighted toward practical and theoretical education in radionuclide cardiac imaging and related information.

General Goals: The primary goal of training in cardiac nuclear medicine is that all fellows should understand the basic principles of radioisotope imaging, how to choose the best radioisotope test to order to answer a specific clinical question for an individual patient, and how to apply the information contained in reports of cardiac nuclear medicine procedures to the care of individual patients. It is expected that fellows will progressively develop knowledge and skills related to performance and interpretation of cardiac nuclear medicine imaging studies.

Specific Goals: The specific goals of the Nuc 1 rotation are to:

1. provide training and experience so that the fellow can appropriately request radioisotope procedures for patients and so that the fellow can assess the quality and reliability of radionuclide procedures and interpretations performed by others
2. provide experience with radioisotope procedures as an adjunct to cardiac stress testing by various pharmacologic and exercise methods
3. meet the requirements of the ACGME-RRC-CD and ABIM-CD for training and board eligibility
4. provide training and experience necessary to pass radionuclide-related components of the ABIM-CD examination
5. meet ACC Level 1 training criteria for radionuclide studies
6. meet, as far as possible in the time allowed, the recommendations developed by the Society of Nuclear Medicine (SNM) for basic training of cardiology fellows in radioisotope procedures.

OBJECTIVES: Objectives of the rotations are described in detail, with reference to Core Competencies, in the Rotation Manuals. Nuc 1 objectives specifically related to radionuclide imaging can be summarized as follows.

At the end of the Nuc 1 rotation, the fellow is expected to be able to

1. Assess the advisability and selection/modification of stress testing (by exercise or pharmacologic means) in individual patients with respect to the relative risks and benefits of the test to be performed, particularly with respect to the adjunctive use of radioisotopes in stress tests.
2. Discuss the basic scientific principles of radionuclide imaging instrumentation and radiopharmacy.
3. List radionuclide techniques for assessment of known or suspected cardiac conditions.
4. Discuss the clinical applications and indications for widely available radionuclide techniques (such as myocardial perfusion imaging, first pass and equilibrium blood pool imaging, and infarct imaging) as well as positron emission tomography. (This will include the indications, contraindications, expected results, and technical and clinical

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- situations that may affect the validity of study results.)
5. Describe the key procedural and technical components of common radionuclide procedures.
 6. Provide basic interpretations of common radionuclide cardiac procedures. (This will include evaluation of the technical quality of the study as well as an understanding of the physiologic information portrayed and the clinical consequences of the study in the patient's care.)
 7. Discuss basic principles of radiation safety and appropriate recommendations as they apply to patients undergoing diagnostic radionuclide cardiac procedures and to the public and to personnel working in this environment.

EPS/Devices, Non-Invasive Evaluations

1. Objectives

Familiarize the cardiology Fellow with the evaluation and management of patients with arrhythmias as well as diagnostic and therapeutic procedures involved.

2. Suggested Duration of the Rotation

Two months minimum – preferably during the second year

3. EPS

The Fellow should be familiar with all patients undergoing EPS; will participate actively in the EP procedure and will review all tracings involved in it; will present at least one case every two to four weeks in conference; will review at least one article every week and participate in EP Journal Club.

4. Device Clinic

Pacemaker/ICD follow-up and troubleshooting.

The Fellow, during the rotation, will be involved in the interrogation and reprogramming of single and dual chamber pacemaker and ICD's with at least ten opportunities assessing dual chamber devices. Follow procedure documentation guidelines (section XV).

5. Micro T-wave alternans. Fellow will get exposure to performance and interpretation of this test.

6. Tilt Table testing. Fellow will be able to gain experience regarding indication, proper performance and interpretation of the tilt test.

7. For purposes of future practice and board certification capabilities, the Fellow will be expected to be familiar with the task force reports on indications for EPS, Pacemaker and devices as well as other pertinent guidelines.

8. The EP fellow is responsible for the preliminary interpretation of all inpatient pacemaker and ICD charts on a daily basis. All reports will be placed in the Arrhythmia Center for interpretation.

The fellow on EP rotation will evaluate consults on the service.

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H. Cardiac Cath Lab

1. General Information

The Cardiac Cath Lab operates from 7:30a.m. to 10:30p.m., Monday thru Thursday, 8:30a.m. to 10:30p.m. on Fridays, and 7:30a.m. to 7:30p.m. on Saturdays and Sundays. A team is on call from emergency cases as needed. The call crew can be notified via the page operator at (832)355-4146. Hospital scrubs must be worn in the cath labs, and universal precautions (cap/mask/shoe covers/eye protection) must be followed during cases. Food and drinks are not allowed in the procedure rooms, sterile core, or hallways.

2. Access

The male physicians' dressing room is located at the front entrance of the cardiac cath lab room. Female physicians may change in the staff locker room accessible via the break room. A security system is used to control access to the area; however, your SLEH badge will be encoded so it is recognized by the badge reader. Scrubs are currently stored in the locker room and a locker will be assigned by the Chief Fellow. Mary Jones communicates with Security to ensure badges are coded correctly.

3. Schedule

To schedule a case in the cardiac cath lab, call ext 52251 between 8:00a.m. and 5:00p.m Monday through Friday. The preliminary cardiac cath lab schedule is produced between 3:00p.m. and 4:00p.m. each day for the next working day. The schedule is posted inside the Cath Lab Imaging Center at the entrance closest to the Holding Area. The original copy is posted overnight for physicians to note schedule changes, cancellations, or patient order – this copy is not to be removed. In addition, copies of the schedule are available at the Cath Lab Imaging Center.

A Waiting List is started after the preliminary schedule is posted (faxed) or when the schedule becomes full. The Waiting List is posted by the Holding Area desk next to the tube system. Add-on cases can be scheduled by calling ext 52251 until 5:00p.m. or ext 56650 until 7:00p.m. weekdays. To add on cases after 7:00p.m. for the next working day, simply add the information to the posted waiting list. The following information are mandatory to ensure that the accuracy of the scheduled procedure: patient's complete name, date of birth, medical record number, physician who is scheduled to perform the procedure, procedure(s) to be performed, patient location, time of day added. Please do not remove the waiting list! The final schedule is completed at 6:30a.m. the day of the procedure. Waiting list cases will be worked into the schedule throughout the day. Although the schedule is finalized at 6:30a.m., the schedule is subject to changes

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throughout the day. In the event of an emergency case during normal working hours, the emergency case will be placed in the first available room ahead of scheduled cases.

4. Pagers

Physician pagers should be checked in with the Holding Area secretary while you are working in the cardiac cath lab. The holding area secretary will respond to your pages and log messages. All emergency calls will be transfer to through to your room. Between cases and before leaving the lab, please check your messages. The staff in the room may not consistently answer your pages; they are primarily responsible for monitoring the patient in the room.

The cath lab staff will notify fellows prior to the beginning of a case via pager. Fellows are not paged for scheduled first cases and should be available at 7:00a.m. All first cases are generally prepped and draped by 7:30a.m. Monday – Thursday and at 8:30a.m. on Fridays.

5. Protective Equipment

One lead apron (full protection only) and one pair of lead glasses with side shields are purchase for each physician to use during their fellowship. You are responsible to keep track of your personal lead apron. The cath lab will not provide additional lead aprons during your fellowship. All orders must be placed with the supervisor of the supply area (Kim Halliburton - 56704) in the Cardiac Cath Lab. Radiation badges are also provided to each fellow – see memo. Radiation badges must be worn whenever in the Cardiac Cath Labs. Monthly readings are posted above the badge holder in the Holding Area. Radiation badges are required to be checked monthly. There is a \$3.00 fee payable to the Cardiac Cath Lab for any lost radiation badge.

6. Miscellaneous Operations

1, 3, 4, 10 Single plane room
RM 2 Swing Room – 2 x-ray tables and 1 single plane Imaging system
5, 6, 11, 8 Biplane EPS Rooms
7, 8, 9 Peripheral Rooms (single plane, RM8 is biplane)

All scrub sinks are located outside the procedure rooms in the outer corridor. Sinks located inside each room are for cleaning dirty equipment. All staff, fellows and physician are required to scrub prior to each case.

7. Staffing

The Cardiac Cath Lab staff is composed of personnel from different medical disciplines. Each room is staffed with at least one RN. At least one RN is

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available in each procedure room throughout cases. The Cardiac Cath Techs have experience as LVN's, radiology technologist (RTR), registered invasive cardiovascular specialist (RCIS), cardiovascular technologist (CVT), respiratory therapist (RT) or other related hospital training. Each room has a designated charge person or Room leader who is responsible for the room's schedule and personnel. The Cardiac Cath Lab's schedule coordinator is responsible for facilitating the schedule of all labs in the department as well as coordinating the following day's schedule. The Cardiac Cath Lab Holding Area is staffed with RNs and cath assistants (patient care assistants). A senior Holding Area nurse is in charge of that area and is available to assist you.

Kristen Turner, Vice President, is accountable for the Cardiac Cath Labs, Operating Rooms and Perioperative Services, Non Invasive Cardiology, Cardiology Fellows, and Transplant Services. The Manager of Cardiac Cath Lab Operations is Derrick Johnson, RN. He is responsible for day-to-day Cardiac Cath Lab operations and personnel. A Cardiac Cath Lab supervisor, Gwen Rangel, or Derrick Johnson, is available to talk with patients or family members that need support/assistance. A computerized database is maintained in the department which enables data retrieval. Noe Salinas is the department's Lead Analyst for the Cardiology Information System. He and his assistant can assist in data retrievals. All requests for information should be in writing and are subjected to approval – request will be completed as expeditious as possible. Bridget Van Buren is the Schedule Coordinator for the Cardiac Cath Labs and is responsible for organizing the next day's schedule. Kim Halliburton is the Supervisor for the Cardiac Cath Lab supplies.

8. Filmless Angiograms

SLEH Cardiac Cath Lab is a filmless environment. The Cardiac Cath Lab PACS system is located in RM O601. You can review cath lab angiograms and historical angiograms (past 3 years), special procedure angiograms, Hybrid Suite angiograms, digital x-ray images, CT images, MR images, echo images and reports. All Cardiac Cath Lab images can be retrieved immediately after the procedure is completed.

To do so, the reviewer needs to occupy a vacant workstation and launch the **Encompass** application. The primary user interface has several buttons in a column on the left. The user must **double click** on the button labeled **Primary Database**. This will cause the list of current patients to be displayed. If the patient in question was had a cath lab procedure in the past, the user can issue a query and retrieve historical images from the past 3 years. The query function is launched by pressing the **Search** button. A query form is displayed. Press the **Clear All Fields** in the upper right of the form, and then type the first four characters of the last name in the name field. **Click OK**. This will produce a short list of patients from which the user can select the studies of interest.

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9. FYI

- a. Retrieving historical cines may take 1 – 3 days because of off-site storage. A cath number is the easiest way to retrieve an historical cine films (films prior to July 2001) or patient procedural folder. The cath number is a seven-digit number assigned to each patient who comes through the cath lab each day. The last two digits signify the year the procedure was performed. (e.g. 03308-02). The patient's full name and date of procedure can also be used, but this requires additional time. Historical cines cannot be located utilizing medical record numbers.
- b. All scheduled patients must have a completed History and Physical that is no more than 30 days old with an update note that is signed, dated and time prior to the CCL procedure starting, a signed consent for the appropriate procedure that is counter signed, dated and timed by the physician and a witness
- c. As note above, prior to the procedure all scheduled patient must have the following:
 - i. "Patient Consent" for the cardiac cath lab procedure
 - ii. "H&P within 30 days"
 - iii. Or, "Update To H&P" (if outpatient)
 - iv. "ASA Classification" (for moderate sedation)
 - v. "Mallampatti Score" (airway assessment)all of which must be signed by the cardiologist prior to starting the procedure.
 6. Required lab results – see memo.
- d. After each procedure, the staff may request information relate to the patient's condition from either the fellow or the attending physician prior to leaving the procedure room. Fellows most often complete "Post Procedure Orders" and "Post Procedure Notes" – the later requires the cardiologist signature. Fellows are urged to use the printed "Post Procedure Notes" since it includes all the elements required by the hospital and other regulatory agencies. All elements must be completed. Signature, Date and Time are required on all entries in the patient chart.
- e. State laws require that all personnel who are exposed to clinical radiation are required to wear a radiation monitoring badge. Joint Commission also required that hospitals monitor total radiation doses received by patients during clinical radiation procedures. Radiation dose received by a patient that equal to or exceeds 1,500rads (15,000 mGy)

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during a single event or cumulative dose in a single field within 12-months is a reportable Sentinel Event. SLEH Cardiac Cath Lab Advisory Committee (CCLAC) opted to observe cumulative dose over a 6-months time frame. During the procedure, the CCL staff will prompt you when the patient received 800rads (8,000 mGy) and again at 1200rads (12,000 mGy). If the requirement is exceeded the cardiologist is expected to decide if it is in the best interest of the patient to continue the procedure. Any exposure equal to or exceed 1,200rads (12,000 mGy) is sent to the Radiation Safety Officer for review to determine whether or not a sentinel event has occurred.

- f. Attached is a Power Point presentation of the Joint Commission compliance standards.

10. IMPORTANT PHONE NUMBERS (832) 355-XXXX)

Reservations/Scheduling (Cardiac Cath Lab)	52251
Cardiac Cath Lab Main Number	56650
Request for all Cines or diagrams 56677 or voice mail	56645
CV Outpatient Nursing Unit (CVOP or OP)	53346
Cooley 6B (Post Interventional Unit)	59620
Cooley 6A (Cardiac ICU)	59610
CCU1 & CCU2	56610 & 56620

<u>Room #</u>	<u>Phone #</u>	<u>Room Leader</u>
Holding Area	56650	Alexandra Carter, RN
1	55601	Yvonne Singletary, RN
2	55602	Janie Yanez, RN
3	55603	Terrie Earl, RN
4	55604	Michael McBee, RN
5	55605	Virginia Gomez, RN
6	55606	Sue Rohauer, RN
7	55607	Damir Mesic, RN
8	55608	None
9	55609	Carl Nolan, RN
10	55610	Larry Brown, RN
11	55611	Rangy Young, RCES

Kristen Turner, Vice President	56599
Derrick Johnson, Manager, CCL Clinical Operations	56602 or 56767
Gwen Rangel, Supervisor, Clinical Operations	56766
Kim Halliburton, Supervisor, Inventory	56704
Bridgett VanBuren-Amos, Cath Lab Schedule Coordinator	54394
Rosa Estrada, Administrative Assistant	56602
Noe Salinas, Lead Analyst	56685

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I. Transplant/Heart Failure Rotation

Goals: The purpose of this rotation will be to allow the cardiology fellow to gain insight into the management of patients with end stage congestive heart failure. Patients will be seen in both inpatient and outpatient setting and all aspects of heart failure management will be seen while on the service. Fellows will receive training in medical management with invasive hemodynamic monitoring and tailored medical therapy, electrophysiological management including biventricular pacing and other novel pacing therapies for the heart failure patient, and finally surgical therapies including cardiac transplantation and left ventricular assist device therapy. During this rotation the fellow will likely identify areas in which the faculty is participating in research and research opportunities are available to fellows who develop a longer term interest in patients with end stage congestive heart failure and cardiac transplantation.

1. Training Methods

- a. Clinical: Fellows have the responsibility to round Monday through Friday and be responsible for supervision of patients on the inpatient heart failure and cardiac transplant rotation. Patients will also be seen in the emergency department and congestive heart clinic on an adhoc basis.
- b. Didactic lectures are accompanied with these rounds and there are two weekly didactic sessions on Tuesday morning and Friday morning. Attendings will request that fellows participate in these teaching sessions occasionally review literature for these.
- c. Self Learning: The fellow will be asked to present a topic during the Wednesday noon conference to other fellows and the staff of the transplant section. This conference is open to any topic related to heart failure or transplant medicine that would interest the fellow. In addition, while not required, fellows are able to attend donor organ procurements and review biopsy specimens with the anatomic pathologist.

2. Responsibilities of the Cardiology Fellow

- Rounds Monday through Friday.
- Progress notes on patients.
- Follow-up all ordered studies on a daily basis.
- Presentation of patients for rounds.
- Fellows should be available from 6:30am to 6pm for consultation and urgent patients seen in the emergency department or in the clinic.
- The primary cardiology attendings to whom the fellows will report are Drs. Bogaev, Civitello, Delgado, Kar, and Loyalka; the fellow may round in conjunction with surgical attendings, Drs. Frazier, Gregoric, and Cohnas well.
- Other fellows may be on the service at the same time as the rotating fellow

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in particular, two heart failure/cardiac transplant fellows, in addition to one surgical fellow. In addition, the fellow may work with nurse practitioners in the inpatient or outpatient setting.

- Fellows will be able to perform procedures primarily, right heart catheterization, endomyocardial biopsy, and the occasional left heart catheterization and intra-aortic balloon pump placement. However, this service is not designed as a cath lab rotation and should not be considered as such.
3. Evaluation will be in the standard format as preferred by the Baylor College of Medicine and all evaluations will be reviewed with the fellow prior to finalization.
 4. Suggested Readings: The fellows are given a USB drive with sentinel heart failure articles to read during their rotation. In addition, several recommended textbooks for reference include:
 - a. Heart Failure , Editors: Poole-Wilson and Colucci
 - b. Congestive Heart Failure: Pathophysiology, Differential Diagnosis and Comprehensive Approach to Therapy, Second Edition, Editors: Hosenpud and Greenberg
 - c. Cardiac Transplantation, Editors: Kirklin and Young

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Invasive Cardiology

Experience in invasive cardiac diagnosis will be obtained during individual clinical rotations. AHA/ACC Fellowship guidelines recommend 12 months with 300 procedures as a minimum requirement. ACC/AHA Guidelines for clinical training in Cardiology require 12-month experience and 300 procedures for trainees wishing to pursue interventional training.

Interventional Cardiology (Upper Level)

The interventional rotation is designed to enhance the skills of third-year Fellows in percutaneous transluminal angioplasty procedures. Fellows will be assigned to specific catheterization laboratories during this two-month rotation, where they will participate in all teaching interventional cases performed. AHA/ACC guidelines recommend 300 interventional procedures for training in interventional cardiology.

Ambulatory Care

1. Guidelines: ACGME Guidelines require "ambulatory consultative and continuing care" experience to occur at least ½ day each week throughout the length of the training program
2. Continuity Clinic assignments will be made by the Cardiology Education office to an Attending Faculty Preceptors outpatient office, to begin in August of the 1st year of Fellowship. This assignment will continue throughout all 3 years. A specific morning or afternoon one-half day per week will be identified and serve this function throughout the year. Continuity Clinic assignment will supersede all other duties, with the exception of the period of duty in the CCU and the SLMT during which period attendance at continuity clinic will be suspended.
3. Fellow performance will be graded by the supervising attending in a written evaluation quarterly. The attending will review these evaluations with the Fellow.
4. It is the responsibility of the Fellow to give sufficient advance notice of absence from the continuity clinic, because of leave or vacation, to the faculty supervisor and their office manager/staff, for patient scheduling purposes.
5. The specific program content of the ambulatory care experience is excerpted from the GME Directory 2004-05 (P108) as follows:

V. SPECIFIC PROGRAM CONTENT

A. Patient Care Experience

The available inpatient and ambulatory care patient population must provide experience with those illnesses that are encompassed by, and help to define, the subspecialty. Such experience should include sufficient number of patients over the age of 70 to provide substantial opportunities in the management of the complex physical, social, and psychological problems prevalent in elderly patients. Subspecialty programs must include the following educational components:

1. Experience with ambulatory patients
 - a. Consultative as well as continuing care must occur at least ½-day each week throughout the length of the training program. (Note: Training programs in critical care medicine are exempt from this requirement.)
 - b. On-site faculty members' primary responsibilities must include the supervision and teaching of residents. On-site supervision as well as the evaluation of the educational experience must be documented.
 - c. The patient volume in the ambulatory environment must be large enough to provide adequate numbers of new and return patients. Residents should, on average, be responsible for from one to three new patients and three to six return patients during each ½-day session.
2. Experience with continuity ambulatory patients
 - a. The residents should have an opportunity to follow a panel of patients with a diversity of disease.
 - b. The resident's clinical experiences with ambulatory patients must provide residents the opportunity to observe and to learn the course of disease.

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Evaluations

1. Each attending will record, for your file, an evaluation of your performance on their service. You should sign these evaluations and, if you have any questions or comments, address them before the evaluations are placed in your permanent file.
2. You will be asked to evaluate verbally the instructors on each service rotation. This is done in the context of a quarterly meeting with Dr. Wilson and the other Fellows in your year.
3. You will also be asked to evaluate the instructors and service for each rotation. This is done by completion of the Rotation Evaluation Form. To assure confidentiality the form is distributed by the Fellowship Coordinator. A typed summary of the evaluations is given to Dr. Wilson every 6 months.
6. You will also be evaluated by your continuity clinic attending and have the opportunity to evaluate your continuity clinic on a semi-annual basis.
7. 360° evaluations will be performed on the following services: CCU, Echo, Cath lab, Nuclear Lab, SLMT, and MRI.
8. Periodically you will have the opportunity to evaluate all of the teaching staff.

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CHART PROCEDURES

A. Dictation

1. Histories and physicals, consultations or stat dictation should be on the chart as quickly as possible.
2. Dictation may be completed by using dictaphone or dialing 53650.

B. Progress Notes and Completion of Hospital Charts

1. Progress notes in the hospital chart are required daily or more frequently if indicated.
2. Before transferring a patient from either the Recovery Room/Intensive Care Units or the CCU, a brief progress note is required describing the patient's course of treatment and listing any problems which the physician assuming responsibility for the patient in the future should be aware.
3. Upon the patient's discharge from the hospital, completing all dictation, filling out the chart's face sheet, as well as checking for signatures will greatly lighten the workload of the Staff Physician and Fellow at a later date.

C. Orders

1. Orders should be written dated, timed, and signed by the physician.
2. Although verbal orders or telephone orders are discouraged, routine (non-treatment) orders are acceptable but must be signed by the ordering physician within six hours.

Verbal orders or telephone orders may be given to registered nurses and licensed vocational nurses only.

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NIGHT CALL

A. CCU Fellow

The first year Fellows will be on call on a rotating basis.

1. The CCU Fellow must remain in the hospital, and be available for routine and emergency calls concerning all patients attended by the cardiology teaching staff. The page operator must be informed of any change in the call schedule.
2. This obligation begins at 4:30 p.m. on weekdays and 8:00 a.m. on weekends and ends at 7:30 a.m. on weekdays and 8:00 a.m. on weekends.
3. A room is provided on the 6TH floor next to CCU in which the physician on call may sleep. The keypad number is **7890***
4. The Fellow on call is cardiology consultant of the "Code Blue" team for the hospital. The Fellow is **required** to attend **all** Code Blues and assist as needed. However, all immediate post-code care (transfer note, orders), other than patients who code in the CCU are the responsibility of the code blue resident.
5. The CCU fellow should be the first person called with cardiology issues on all ICU patients that are covered by a teaching cardiologist. Non cardiac issues should be referred to the relevant consultant service if they are on the case. The CCU fellow should field calls for non-cardiac issues on patients for whom a teaching cardiologist is the primary physician, if no appropriate consultant is on the case.
6. The CCU fellow will evaluate ER patients with presumed cardiac illness if requested by direct communication by a teaching cardiologist.
7. The Fellow on call can do STAT echocardiogram or may call the echo technician on call, using the page operator at ext. 54146.
8. The transesophageal stimulator and catheters are kept in the EKG equipment room (P305). Call the EKG technician to bring the equipment and EKG machine.
9. The CCU fellow is NOT responsible for performing consults on patients already in the hospital. However, if time allows, he may do this if requested by a teaching cardiologist.
10. The CCU fellow is responsible for making requested programming

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changes (not electrophysiology consultation) to implanted pacemakers and defibrillators when the pacemaker RN is not on duty. The pacemaker RN is on-duty M-F 8 AM – 5 PM (except holidays). It is the responsibility of the requestor to identify which brand of device is to be reprogrammed.

B. Cardiology House Officer (CHO)

1. Admissions and cross-coverage who remain in the hospital are the responsibility of the CHO include:
 - a. All admissions to and cross coverage for the Chest Pain Center from 7PM to 7AM, M-F, and 24 hour coverage on weekends.
 - b. New admissions to 6 Cooley B Telemetry for patients who have a teaching cardiologist as the primary attending from 7PM to 7AM, M-F, and 24 hour coverage on weekends.
 - c. Cross coverage for all cardiac issues for 6 Cooley B telemetry patients if a teaching cardiologist is on the case.
 - d. Assistance with management of patients who have undergone percutaneous revascularization or diagnostic catheterization by a teaching cardiologist. This will include assistance with sheath withdrawal and urgent evaluation as requested by the primary M.D. or nursing staff.
 - e. Non-Telemetry admission and holding note for patients admitted to Cardiology Teaching Staff.
 - f. Cardiac Stress Tests require supervision by CHO from 7 PM to 10 PM M-F, and 24 hour coverage on weekends.
2. The initial management of acute myocardial infarction is a primary responsibility of the CHO from 7:00pm – 7:00am on both weekdays and weekends:
 - a. An urgent response will be required for patients with ST-segment elevation and new LBBB. The initial medical care and coordination of revascularization efforts for all patients with acute myocardial infarction (including patients of non-teaching attending physicians) is the responsibility of the Cardiology House Officer. Patients requiring urgent referral for direct revascularization (angioplasty) will have an initial history, physical examination and reasons for referral documented in the medical record by the Cardiology House Officer.
 - b. Admission history, physical examination and routine care orders for patients who do not have ST-segment elevation or new LBBB myocardial infarction are the responsibility of the physician to whom the patient is admitted or the resident/fellowship trainee responsible for the nursing unit to which the patient is admitted.
 - c. Coordination of medical care directly related to the initial administration of thrombolytic drugs or the referral for direct revascularization for all patients with acute myocardial

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- infarction.
 - d. Management of all emergency procedures and necessary resuscitation of patients with acute myocardial infarction in the emergency center.
 - e. Performance of all emergency procedures such as placement of a temporary pacemaker or intra-aortic balloon pump, in patients with acute myocardial infarction in the emergency center.
 - f. The Cardiology House Officer will abandon all current activities to respond to an acute myocardial infarction (ST-segment elevation/New LBBB).
 - g. Management decisions will be discussed with the attending physician.
 - h. Due to the "emergency" nature of acute myocardial infarction, the responsibility of the Cardiology House officer, in the setting of ST-segment elevation or new LBBB will apply to "teaching" and "non-teaching" physicians alike.
 - i. In the event that the Cardiology House Officer disagrees with the management plan of the attending physician, the attending physician will be responsible for all subsequent management decisions, orders and examinations that are deemed necessary.
 - ii. During regular working hours (6 AM until 7 PM) the non-teaching attending is responsible for all examinations and management decisions for his/her patient.
3. Responsibilities of the Cardiology House Officer will **not** include,
- a. Documentation of admission history and physical examination for patients admitted to telemetry units or the CCU.
 - b. Coordination of care for patients of non-teaching attendings in whom there is no apparent need for urgent revascularization (i.e., absence of ST-segment elevation or new LBBB).
 - c. Initial clinical evaluation of all patients with a complaint of chest pain. The first determination of the probable cause of discomfort is the responsibility of the emergency center physician.

C. Second Call (Interventional Fellow)

- 1. An additional senior fellow is assigned each day to assist or render backup advice and assistance to the first year CCU Fellow on call. The second call (Interventional fellow) is not required to remain in the hospital.
- 2. In the event a patient is admitted with acute myocardial infarction, requiring emergency catheterization and/or TCA, the Interventional Fellow will assist the attending physician during the procedure.

D. Telemetry House Officer (THO)

The Telemetry House Officer (THO) is a house officer appointed by the Department of Medicine to cover certain areas of the hospital, nights and weekends. Responsibilities of the THO are defined by the Department of Medicine and their areas of coverage are enumerated on pages 26a, and 26b.

E. Other Coverage

Areas of coverage by the house officers are enumerated on The Source.

F. Hurricane Coverage

Activation Warning:

Typically 48-72 hours before the actual team is "called-in", there will be a notification that activation is upcoming.

Activation:

Typically "hurricane activation" will occur 24 hours before storm landfall.

Who is on the team?

When the "activation" occurs, it is expected that whoever is on call for the NEXT TWO days will be part of the team, plus one interventional fellow." If you are expected to be on the team, and can not, for whatever reason, be present - it is your responsibility to find coverage. Interventional fellows will decide amongst themselves who will cover.

Expectations of the team:

If you are scheduled to be on call within the next 48 hours following "activation", then you are expected to report to the hospital with clothes/accessories for a possible stay of up to 3-4 days (absolute worst case scenario). You are expected to remain in the hospital for the entire time, but are only expected to work when you were originally scheduled - unless another coverage arrangement is made between the team members. Food, water, shelter, air conditioning, running plumbing, and patients are provided by the hospital.

Payback:

If you are called in and have to work *more than just the shift you were originally scheduled for* (say the team remains in house for three days), then you will be payed back with extra vacation days.

Examples:

1. Activation is called Tuesday at Noon. CCU fellows for Wed and Thursday, Cardi-Hoes for Wednesday and Thursday, and 1 interventional fellow make up the team.
2. Activation is called Wed at Noon. Wednesday people are safe, CCU fellows for Thurs and Friday, Cardi-Hoes for Thurs and Friday, and 1 interventional fellow make up the team.

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** Again, if you have switched call, have other commitments (small kids); if you are on the schedule, then you will need to find someone to cover.

BEEPERS

- A. The CCU beeper is kept by the Fellow assigned to the CCU rotation, Monday-Friday from 7:30 a.m. to 4:30 p.m.
- B. After 4:30 p.m. during the week and 8:00 a.m. on the weekend, the beeper is carried by the Fellow on first call (CCU Fellow).
- C. The beeper must be personally given to the physician assuming duty each night or weekend day and it is never to be left unattended between shifts. Information regarding very sick patients and problems will be transmitted verbally at the time of beeper exchange. (Batteries for replacement may be obtained in Network Services [Lower level, Blue Elevators] or the Noninvasive Laboratory.)
- D. The Cardiology House Officer (CHO) beeper is picked up in the Cardiology House Office call room (P624) by the assigned Fellow on call and kept from 7:00 p.m. to 7:00 a.m.

MEALS WHILE ON CALL

All Cardiology on call Fellows, are entitled to "Call Meal Tickets". Meal tickets for the month may be obtained through the Medical Staff Services Department, Room G127, 8:00 a.m. to 4:00 p.m., Monday through Friday, excluding Holidays. Tickets must be redeemed during the month for which they are issued.

Meal tickets will be available for pick up two days prior to the end of the month unless those two days should fall on a weekend or Holiday. In that case, meal tickets shall be available two working days before the beginning of the month if the call schedule is available.

To pick up meal tickets, Residents must bring their School identification badge. Residents will be required to sign for the meal tickets on the call schedule in Medical Staff Services to verify that they have received their meal tickets.

Residents shall be responsible for their meal tickets. **Meal tickets lost or stolen will not be replaced.** A Resident trading call with another shall be responsible for providing his/her "on call" meal tickets for the day (s) traded to the new resident "on call". Meal tickets not redeemed during the month for which they are issued shall be void on the second day of the following month. PLEASE NOTE: EXPIRED TICKETS WILL NOT BE ACCEPTED IN THE BERTNER AVENUE CAFÉ.

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Meal tickets may only be redeemed in the Bertner Avenue Café. No change or credit will be given. Residents must sign the appropriate ticket in front of the cashier at the time the meal ticket is being redeemed. If you have any questions or concerns please contact Consuelo Barton at (832) 355-4200.

PHOTOSTATIC & PHOTOGRAPHIC SERVICES

- A. The SLEH Cardiology Division has photocopy machines available for use by Cardiology students and Fellows. Certain amounts of reproduction are necessary to facilitate research and training. Abuses of the privilege for personal or voluminous reproduction handicaps the operations of the using departments and places an unnecessary financial burden on the funding source. The copiers are controlled by code numbers and the usage is reviewed periodically.
- B. Reproduction of smaller quantity is available at Jesse Jones Medical Library. Contact the Cardiology Fellowship Coordinator for assistance.
- C. Power Point or transparencies or will be used for visual presentation for all conferences. Transparencies may be obtained from the Cardiology Fellowship Office.
- D. **Written approval** for graphics or artwork necessary for journal publication **MUST** be obtained from the Fellowship Coordinator **BEFORE** payment can be made.

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TIME OFF

A. Sick Leave (Including Maternity)

1. Each Fellow is allowed 14 calendar days paid sick leave per academic year. Unused sick days will be carried forward and be available in each subsequent academic year. These days may be used only in the event of an actual illness. A physician's statement is necessary if the illness extends beyond 3 consecutive working days. A Time Off Request must be completed by the Fellow in advance for scheduled time off and upon return to work if the time off is unscheduled. FMLA must be used for time off over three days.
2. In the event of illness, please contact the service on which you are rotating as soon as possible so that coverage may be arranged during your absence. The Chief Fellow, Director of Cardiology Education, and the Fellowship Coordinator should also be notified.
3. The Chief Fellow, Director of Cardiology Education, and Fellowship Coordinator should also be made aware of impending absenteeism if you will be unable to assume your on-call responsibilities or if you are on the CCU rotation. Coverage should be arranged at least 2 days in advance, if possible.

B. Vacation and Holiday Leave

1. Each Fellow is granted 10 working days of vacation time annually and the following authorized holiday time off:
 - Christmas Day
 - New Year's Day
 - Labor Day
 - Memorial Day
 - Thanksgiving Day
 - Independence Day
2. In addition, one week of Christmas or New Year's leave is given to each Fellow. Preference and available days for scheduling will determine the exact dates of this leave. This week is a mandatory week.
3. Vacation time is to be utilized for leisure activities. Third year fellows will be allowed 5 days of interview time in addition to vacation. If more than 5 days are needed for interviews, vacation time must be used.
4. All vacation time must be used two weeks prior to the end of the academic year, before June 15th. Vacation time requested the first two

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weeks of June will be approved on a case by case basis. Fellows are not allowed to take more than one week per month on any given rotation. Unused vacation time **cannot** be carried over into the next year unless approved in advance by the Fellowship Coordinator.

5. **No vacations** will be taken during Treadmill, CCU and Nuclear Cardiology rotations.
6. **Requests for vacations should be submitted** as soon as possible but not later than two weeks prior to leaving. The **fellow taking vacation must make arrangements to cover any clinic or call for which he had previously been scheduled to cover, and must notify the Chief Fellow of the change.**

The change must be approved by the rotation service attending and the Director of Cardiology Education.

A vacation calendar will be posted in July to allow appropriate scheduling of vacations and holidays. **Vacations must be distributed equally throughout the year, such that vacation time on permitted rotations are equitably distributed among such rotations.**

C. **Personal Leave**

Three calendar days per year are available only for extenuating personal circumstances with the approval of the Director of Cardiology Education (i.e.: a death in the immediate family, legal matters unrelated to professional responsibilities, etc). Personal days will be approved on a case-by-case basis and the use of personal time will need to be explained. This "personal" leave time, will not accumulate or transfer to "vacation" or "educational" leave.

D. **Educational Leave**

Ten days of educational leave are granted yearly by the Director of Cardiology Education. Three days of educational leave must be used to attend either AHA or ACC. Educational leave **may** be used to attend Board Review courses, but Board Review courses are not funded. Additionally, educational leave is rarely granted for more than three consecutive days. Educational leave is granted **only** to Fellows who have met participation requirements (70%) in Program In-House Conference requirements and have evaluations up-to-date. **If these requirements have been met funding and appropriate time off will be given for attendance at educational meetings as follows:**

1. First through Third Year Fellows - SLEH will fund:

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- a. One major scientific meeting (AHA, ACC, NASPE, ASE, NUC) per year. Only half of the Fellows can be away at the same meeting. Funding will include round trip airfare (**reservations must be made at least 21 days in advance or the fellow will be responsible for the difference in airfare**) registration, hotel, and meals totaling \$1000.00.
- b. For first year fellows: The department will support one basic arrhythmia/ICD programming course that is co-funded by an industry sponsor and is approved by the program director.
- c. Research and Education Fund will sponsor travel and expense for any Fellow who is presenting a **major** scientific paper that is approved by the Director of Cardiology Education. This will not be considered as part of, but in addition to 1(a). If the Fellow has already attended one major meeting, the Fellow may not attend the full meeting, only the presentation meeting and return after the presentation is made.
- d. Educational leave must be used two weeks prior to the end of the academic year, before June 15th.

Educational leave must be distributed equally throughout the year, so that educational leave time is equitably distributed among the rotations.

2. Third Year Fellows:

- a. One manufacturer sponsored pacemaker course during your third year of fellowship training that has been approved by the Director of Electrophysiology (unfunded).
- b. One EPS meeting during the three years of fellowship training (unfunded).
- e. Research and Education Fund will sponsor travel and expense for any Fellow who is presenting a **major** scientific paper that is approved by the Director of Cardiology Education. This will not be considered as part of, but in addition to 1(a). If the Fellow has already attended one major meeting, the Fellow may not attend the full meeting, only the presentation meeting and return after the presentation is made.
- f. Educational leave must be used two weeks prior to the end of the academic year, before June 15th.

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A calendar will be posted in July on the website to allow appropriate scheduling of educational leave. **Educational leave must be distributed equally throughout the year, so that educational leave time is equitably distributed among the rotations.**

3. Interventional Fellows - SLEH will fund:
 - a. The Interventional Fellows may attend one of the two scientific meetings: ACC or AHA. Only half of the Fellows can be away at the same meeting. Funding will include round trip airfare (**reservations must be made at least 21 days in advance or the fellow will be responsible for the difference in airfare**) registration, hotel and meals totaling \$1000.00.
 - b. One manufacturer sponsored interventional program (unfunded).
 - c. Research and Education Fund will sponsor travel and expense for any Fellow who is presenting a **major** scientific paper that is approved by the Director of Interventional Cardiology. This will not be considered as part of, but in addition to 3(a). If the Fellow has already attended one major meeting, the Fellow may not attend the full meeting, only the presentation meeting and return after the presentation is made.
 - d. Educational leave must be used two weeks prior to the end of the academic year, before June 15th.
4. EP Fellows - SLEH will fund:
 - a. The EP Fellows may attend NASPE. Funding will include round trip airfare (**reservations must be made at least 21 days in advance or the fellow will be responsible for the difference in airfare**) registration, hotel and meals totaling \$1000.00.
 - b. Research and Education Fund will sponsor travel and expense for any Fellow who is presenting a **major** scientific paper that is approved by the Director of EP. This will not be considered as part of, but in addition to 4(a). If the Fellow has already attended one major meeting, the Fellow may not attend the full meeting, only the presentation meeting and return after the presentation is made.
 - c. Educational leave must be used two weeks prior to the end of the academic year, before June 15th.

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5. Procedure

- a. All requests for time off, whether vacation, personal, or educational, must be submitted to the (1) Attending whose service you will be taking time off from, (2) Director of Cardiology Education, (3) Chief Fellow, and (4) Fellowship Coordinator for the file. The form should be requested by the Fellow and originate from the Fellowship Coordinator's office.
- b. At least 21 days notice **must** be given to allow (1) trip arrangements to be made and to take advantage of best airfare and accommodations, and (2) coverage of areas of rotation and call. The Fellows requesting leave must arrange for coverage for any clinic or call.
- c. For SLEH sponsored programs, travel arrangements should be made after approval is granted through the Fellowship Coordinator and in accordance with SLEH Travel Policy and Procedure.

To be reimbursed for airline reservations the reservations must be made through the Hospital approved travel agency unless: (1) satisfactory arrangements cannot be made through the Agency or (2) if charges through another travel agency are less than through the approved Agency and in both circumstances the Fellowship Coordinator must be notified.

Reimbursement for expenses will be paid after the trip when receipts, travel vouchers, and documentation is given to the Fellowship Coordinator. **Original receipts**, bills, and ticket copies are **required** to support all expenditures. No travel expense report will be approved without the **original**, supporting documentation. If travel expenses are not approved in writing **prior** to the trip being taken, the trip will not be reimbursed. If adequate documentation is not submitted within **14 days** from the date of return you will not be reimbursed for your expenses.

E. Leave-of-Absence

Fellows may request and take an unpaid leave-of-absence for up to 2 months with the approval of the Director of Cardiology Education, Interventional Cardiology and/or EP. A letter stating the purpose of the leave shall be signed by both the Director and the Fellow, with notification made to the Baylor Department of Medicine and to the Graduate Medical Education Office. If all or

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any part of this leave-of-absence is due to illness or injury, a physician's statement will be required, along with FMLA forms completed. The Fellow will be responsible for payment of medical, dental, term life, and long-term disability insurance premiums during the leave-of-absence.

Time missed for any reasons beyond that permitted by the American Board of Internal Medicine (ABIM) must be made up. When total (cumulative) time lost for any reason exceeds that permitted by the ABIM, the Fellow's promotion to the next level of training will be delayed by an amount equal to the time that needs to be made up. This delay supersedes any existing letter of appointment in regard to dates, year of appointment, and stipend, but does not negate the reappointment.

F. Time Without Pay

Time off without pay (personal leave) in addition to vacation time will be considered on an individual basis by the Director of Cardiology Education.

Forms for time off without pay should be completed by the Fellow and signed by the Chief Fellow and rotation Attending before leave will be authorized. As with all other forms of leave, arrangements for clinic and call coverage must be made prior to leaving.

G. FMLA

1. FMLA eligibility: Employees are eligible for FMLA if they meet all of criteria:

- Employed with BCM for at least a year
- Have worked at 1,250 hours during the last 12 months prior to the start of the leave.
- Provide documentation that substantiates the need for leave under the FMLA.

2. Notification regarding the possible need for FMLA: If an employee's need for leave is foreseeable, they are required to provide at least 30 days notice (includes completed FMLA form/documentation that confirms the need for leave). If the need for leave is unforeseeable, the employee must give notice as soon as practicable and must respond to the employer's (HR's) questions about why the need was unforeseeable. In the event an employee does not follow company procedures, employers may delay or deny FMLA leave.

http://intranet.bcm.tmc.edu/index.cfm?fuseaction=Policies.Display_Policy&Policy_Number=02.8.25

3. Compliance with Company Call-in policy: If an employee fails to follow the employer's call-in procedures, except under extraordinary

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circumstances the employee may be subject to whatever discipline the employer's rules provide for such failure and the employer may delay FMLA coverage until the employee complies with the rules.

4. **LOA form (Resident and Clinical PostDoc Fellows):** Program Directors/Coordinator should submit a completed LOA form to the GME, if at possible 30 days prior to the expected first day off work when the need for leave is foreseeable. If the need for leave is not foreseeable, the LOA form should be completed as soon as notification is received from the Resident/Fellow (i.e. as soon as practicable based on the situation). *GME in turn reviews the form and forwards it to HR/Regulatory Compliance.*
5. **Completed FMLA form or medical documentation that confirms the employee's need for leave:** The completed FMLA is the preferred method for an employee to submit documentation to cover their absence because it was created to capture the information necessary to determine if an absence is covered under FMLA.

The FMLA form is located on the BCM intranet

http://intranet.bcm.tmc.edu/?fuseaction=home.showpage&tmp=/hr/files/files_rcompl/certificationhealthprovider.

For employees that start leave without documentation, HR sends them a copy of the form and advises them of the steps necessary to determine whether or not the absence is eligible under FMLA. In lieu of the form, HR currently accepts a physician's statement that confirms the employee or family member suffers from a serious health condition, the start date of the leave, and the estimated duration. The physician's statement should be on the doctor's letterhead. *If it isn't, the documentation is not acceptable and HR will notify the employee regarding fixing the deficiency.*

Once the employee has the completed FMLA form or physician's statement, they should forward this information directly to HR. Completed FMLA forms or doctor's statements should not be given to the contact persons in the department, the employee's direct supervisor, GME, or anyone outside of HR/Regulatory Compliance. If an employees happens to give the departmental contact the information, they have two options, give the document back to them and ask that they fax it directly to HR at 713-798-8077 or fax it to HR and then shred the information they have been given. The same is true as it pertains to the employee's release to return to work.

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6. **Allowing an employee to return to work without clearance from their physician:** Each employee on FMLA receives a formal notification letter from HR that discusses their rights and responsibilities while on leave which includes providing a release from the physician at least two days prior to return to work or as of their first day back to work. Allowing an employee to return to work without it could cause liability issues.

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LAUNDRY

Laboratory Coats

- A. Each First Year Fellow will receive three laboratory coats. All other coats will be fellows responsibility.
- B. Fellow's laboratory coats are expected to appear neat. Free laundry service is provided for the cleaning of these coats. Dirty coats should be placed in the LAB COATS ONLY basket located in the Fellows' Room. Cleaned coats will be delivered to the same location.

CONFERENCES

In-house Conferences

An ongoing conference schedule has been prepared for all Fellows in training. It is **MANDATORY** that **ALL** Fellows participate in at least 70% of conferences. An attendance sheet requiring your signature will be available at each meeting.

Fellow attendance at In-House Conferences is reviewed prior to granting Educational Leave. Attendance, as stated above, is mandatory.

EMERGENCY DEPARTMENT (ED) COVERAGE

- A. The physician responsible for evaluating all adult Emergency Department patients is the ED physician, or the Attending.
- B. Code Blue in the ED is primarily the responsibility of the ED physician. The Cardiology Fellow will be paged for assistance if so needed.

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COVERAGE OF CCU

The CCU fellow will respond to all calls concerning patients that have a teaching cardiologist as their admitting physician. Questions about patients admitted to other services (neurology, IM, etc) should be directed to that services resident, fellow or attending. If a teaching cardiologist has been consulted on a patient admitted by a non-cardiology attending, the CCU fellow will respond to all questions of a **cardiac** nature.

FLOORS

Patients admitted by any teaching physician to a telemetry unit are the responsibility of the telemetry house officer. Patients admitted to the Chest Pain Center by any physician are the responsibility of the CHO. Non-telemetry patients admitted by a teaching cardiologist are also the responsibility of the CHO. The CCU fellow should be available to assist in management of telemetry unit patients if requested by the telemetry house officer or by a teaching cardiologist. If a patient is to be transferred to the CCU the transfer note and orders are the responsibility of the transferring house officer, not the CCU fellow.

XIV. ARRHYTHMIA DEVICE CENTER (PACEMAKER CLINIC) COVERAGE

The cardiology fellow on-call is responsible for providing backup coverage to the Pacemaker Clinic Monday through Friday from 5:00 p.m. until 7:00 a.m., on the weekends, and designated holidays. The page operator will page the cardiology fellow on-call after clinic hours. If pacemaker or ICD reprogramming is performed, it must be documented in the patient chart. When called to reprogram a device, interrogate and print the initial settings. Reprogram and print the final settings. Review the pre and post settings to ensure the parameters were reprogrammed correctly. Both the initial and final printouts are to be left in the Pacemaker Clinic with the patient's name noted on the pt log found in the clinic office.

Access to Pacemaker Clinic and Files

The pacemaker clinic exam room (P319) and office (P321) will be made available to all 1st year fellows. If a patient has been seen here, the Pacemaker or ICD chart is kept in office (P321) or, if a report is pending physician interpretation, in the ECG Lab (P323) or in Dr. Massumi's and Dr. Seger's respective boxes in the interpretation area (P323). Call security to open the ECG Lab (P323) after hours if a chart is needed. Pacemaker records are in either manila or purple folders and ICD records are in red folders.

After Hours Transtelephonic Pacemaker Monitoring

After clinic hours, the SLEH Outpatient Pacemaker Clinic phone is forwarded to the CCU. Patients may call in after hours with symptoms requesting a pacemaker check

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by telephone. The CCU nurse will complete the test (an ECG strip without magnet and an ECG strip with a magnet when indicated). The strips are to be reviewed for sensing and capture. If a problem is noted, the patient may be directed to come to the emergency center or the attending physician notified. Documentation of the strips, patient name, symptoms, and action taken are to be noted in the transtelephonic reports kept next to the transtelephonic receiver. The Cardiology fellow must sign the report. The pacemaker nurse will check the binder containing the reports every working day for call-ins and will follow-up with the patient.

Programmers

Programmers are located in the pacemaker clinic. They have been labeled according to company. The programmer must be returned to the Pacemaker Clinic ASAP.

Programmer Instructions

If review is needed in addition to the initial orientation session, fellows are strongly encouraged to arrange time with the Pacemaker Clinic (x4928).

Pacemaker Company Representative

A list of each company's representatives and telephones number are posted in the CCU fellow on-call room and pacemaker clinic. The cardiology fellow can call the device representative for assistance at anytime (see below). The company representative should be directed to notify the fellow of any abnormal findings or necessary reprogramming. If pacemaker or ICD reprogramming is made, the fellow should document it in the patient chart.

Policy and Procedure

Policy and procedures have been developed for both pacemaker clinics and can be referenced if needed in the departmental policy and procedure manual.

XV. PROCEDURE DOCUMENTATION

During each rotation, all Fellows must maintain a log of procedures performed indicating pacemaker and ICD tests observed. The information to be logged varies according to the procedure. Documentation methods and forms should be requested during each rotation. At the conclusion of the rotation, the attending supervising the rotation should validate the recorded information with his signature.

The documentation should be kept for your personal file and a copy should be given to the Fellowship Coordinator for your permanent institutional file.

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After graduating from the program, most institutions will require very specific procedure totals. It would be useful to Dr. Wilson, when he composes correspondence, to have this information readily available.

Other Fellows have developed computer-assisted documentation, which can be utilized to aid in keeping these records.

XVIII. PACEMAKER/ICD REPRESENTATIVES

<u>COMPANY</u>	<u>REPRESENTATIVE</u>	<u>PHONE NUMBER</u>
<u>BIOTRONIK</u> Tech Support	Mike Rudy Bill Madiera	(713) 880-8677 (800) 547-0394
<u>ELA</u> Tech Support	Jim Brown	(888) 457-2290 (800) 352-6466
<u>Guidant/CPI/Intermedics -</u> Tech Support	George Wislar Tracy Holt	(800) Cardiac (800) 227-3422
<u>MEDTRONIC/Vitatron -</u> Tech Support	Clark Young John Salazar	(281) 875-0375 (800) Medtronic (800) 505-4636
<u>ST. JUDE MEDICAL/Pacesetter -</u> Tech Support	Jessica Taylor	(800) 722-3423 (800) 722-3774

MODERATE SEDATION

As part of their fellowship training, all Fellows are required to complete the I-Learn 'Moderate Sedation' review and exam with the first month of fellowship and thereafter on a yearly basis.

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RESEARCH

As part of their fellowship training, all Fellows are required to participate in research, under the guidance of a faculty mentor. Meaningful research activities are a mandatory requirement for Board eligibility. Fellows who do not participate in research will not be Board eligible.

The Fellows will meet regularly with the Director of Cardiology Research to discuss their research activities. All fellows are expected to be involved in at least one major project that can be either (1) submitted to a major refereed journal; or (2) presented at a major national meeting. Collaborative projects are permitted but each involved fellow must play a substantial role in the project.

Fellows will be expected to present their projects at regular departmental conferences. Fully-protected research time will be available as a block-time elective for second and third year fellows. Prior to undertaking such a research elective, the fellow must have clearly articulated goals for his/her research. During the elective the Fellow will be expected to maintain close contact with the involved faculty supervisor(s). Alternatively, arrangements can be made for protected research time of up to ½ day per week during fellowship training to allow for ongoing meaningful research participation. Again, all such activities will be conducted under the supervision of an identified faculty mentor and progress reviewed periodically with the supervisor, Research Director and Program Director.

Protected research time will also be available for the EP and Interventional Fellows. Prior to undertaking a research project, the Fellow should have identified a faculty supervisor and met to discuss the project with the Program Director. The Fellow will communicate regularly with his/her faculty supervisor and the Program Director to discuss the progress of their research activities.

At the end of each year all fellows will prepare a summary of their research activities for the year, including brief summaries of all projects and copies of all protocols, abstracts, published articles, and submitted manuscripts. These will be submitted to the Director of Cardiology Research and kept on file for each fellow.

FELLOWS 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 spent 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 four-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,

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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. In-house call must occur no more frequently than every third night, averaged over a four-week period.

Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents 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. No new patients, as defined in Specialty and Subspecialty Program Requirements, may be accepted after 24 hours of continuous duty

Fellows are responsible for completing the Work Hour Documentation form on a monthly basis and sending it electronically to the Coordinator. Fellows are expected to be on duty during normal daytime working hours of the particular rotation to which they are assigned. Among the various clinical services the exact time will vary, but will be approximately 6:30 a.m. until 6:00 p.m. Clinical necessities will dictate how late the workday will extend. The Fellow is expected to be free from clinical responsibilities to attend mid-day conferences, Friday morning Cardiology Basic Science Conference and Cardiology Grand Rounds, and faculty Continuity Clinic every week. Teaching Attendings have been notified that Fellows are to leave early on the day following in-house night call. The call schedule and duty hours are adjusted to provide the Fellows 24 hours free from program duties each week.

EXTRACURRICULAR PROFESSIONAL EMPLOYMENT (MOONLIGHTING)

The Baylor College of Medicine Policy for extracurricular professional employment (moonlighting) is very specific. The process for moonlighting approval is posted in the fellows room.

Deviation from this policy is not tolerated by St. Luke's Episcopal Hospital.

QUALITY ENHANCEMENT PARTICIPATION

The CCU Fellow and Chief Fellow will attend the monthly CCU Committee Meeting held on the 2nd Tuesday of each month, 12:00 p.m., in P542, PDR 1&2.

The CCU Fellow will attend the monthly CPR Committee Meeting held on the 1st Tuesday of each February, April, June, August, October and December, 7:00 a.m., Room G169.

The Chief Fellow will attend the monthly Cardiology CPT Meeting held the 4th Thursday of each month, 11:00 a.m., in B610.

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INTERVENTIONAL CARDIOLOGY

Each case should be documented in your logbook with the following information:

- Date
- Patient Identification
- Procedure
- Level of participation
- Indications
- Complications
- Approach
- Attend

Each fellow will be responsible for a summary compilation of procedures and providing a copy of their logbook for their fellowship file at the completion of their Cardiology training. The summary compilation is to be signed off on by the Interventional Cardiology Program Director or CCEP Program Director and the Medical Director of the Cardiac Catheterization Laboratory.

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Cardiovascular Disease Training Program
RESIDENT SELECTION

The selection of house staff officers of the Department of Cardiology Baylor College of Medicine/St. Luke's Episcopal Hospital (Program 2) is based upon a stated interest in additional training in the subspecialty of Clinical Cardiology, demonstrated aptitude during Internal Medicine Residency training, academic credentials, communication skills, motivation and integrity. The selection is not influenced by race, gender, age, religion, color, national origin, disability, or veteran status. The selection of Cardiology Fellows for the core program is via the NRMP Match (through ERAS). The selection of Cardiology Fellows for the added certification programs (Electrophysiology, Interventional Cardiology) is via personal invitation. A subcommittee is established by the Program Director to assist him/her in the selection process of qualified applicants for training in Cardiology at Baylor College of Medicine/St. Luke's Episcopal Hospital Program 2. The process is as follows:

1. Applicants are eligible for appointment with the following qualifications:
 - a. Medical School
 - i. Graduates of medical schools in the United States, and Canada accredited by the LCME.
 - ii. Graduates of colleges of osteopathic medicine in the United States accredited by the American Osteopathic Association.
 - iii. Graduates of medical schools outside the United States and Canada who meet one of the following qualifications:
 - iv. Have received a valid certificate from the ECFMG.
 - v. Have a full and unrestricted license to practice medicine in a US licensing jurisdiction.
 - b. Graduates of ACGME accredited Internal Medicine Residency training program providing eligibility for specialty board certification.
2. The resident applicant must apply through submission of an application available online and the NRMP (Match) for Cardiology.
3. The resident applicant's application is reviewed by the Program Director and/or his/her designee.
4. The resident applicant is interviewed by three or more faculty, the Program Director and one or more active fellows.
5. The Program Director, with the assistance of the Cardiology Fellow Selection Committee, establishes the rank order of applicants for the Cardiology Match.
6. The Program Director provides the selected applicants with a contract for one year of training at the PG4 level (first year of Cardiology Fellowship training) to be effective following the successful completion of a PG3 clinical year.
7. The applicant must qualify for a Texas Educational Permit or have an active Texas license to practice medicine.

The goal of the selection committee is to select and match with the best-qualified applicants for the program based on factors as outlined above.

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Clinical Cardiac Electrophysiology Program
RESIDENT SELECTION

The selection of house staff officers of the Department of Cardiology Baylor College of Medicine/St. Luke's Episcopal Hospital is based upon a stated interest in additional training in the subspecialty of Clinical Cardiac Electrophysiology, demonstrated aptitude during Internal Medicine Residency training, Cardiovascular Disease training, academic credentials, communication skills, motivation and integrity. The selection is not influenced by race, gender, age, religion, color, national origin, disability, or veteran status. The selection of Cardiology Fellows for the added certification program Electrophysiology is by application process. A subcommittee is established by the Program Director to assist him/her in the selection process of qualified applicants for training in Electrophysiology at Baylor College of Medicine/St. Luke's Episcopal Hospital. The process is as follows:

8. Applicants are eligible for appointment with the following qualifications:
 - a. Medical School
 - i. Graduates of medical schools in the United States, and Canada accredited by the LCME.
 - ii. Graduates of colleges of osteopathic medicine in the United States accredited by the American Osteopathic Association.
 - iii. Graduates of medical schools outside the United States and Canada who meet one of the following qualifications:
 1. Have received a valid certificate from the ECFMG.
 2. Have a full and unrestricted license to practice medicine in a US licensing jurisdiction.
 - b. Graduates of ACGME accredited Internal Medicine Residency training program providing eligibility for specialty board certification.
 - c. Graduates of ACGME accredited Cardiovascular Disease Fellowship training program providing eligibility for subspecialty board certification.
9. The applicant's application is reviewed by the Program Director and/or his/her designee.
10. The applicant is interviewed by three or more faculty, the Program Director and one or more active fellows.
11. The Program Director, with the assistance of the Cardiology Fellow Selection Committee, establishes the rank order of applicants.
12. The Program Director provides the selected applicants with a contract for one year of training at the PG7 level (fourth year of Cardiology Fellowship training) to be effective following the successful completion of a Cardiovascular Disease Fellowship.
13. The applicant must qualify for a Texas Educational Permit or have an active Texas license to practice medicine.

The goal of the selection committee is to select and match with the best-qualified applicants for the program based on factors as outlined above.

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Interventional Cardiology Training Program
RESIDENT SELECTION

The selection of house staff officers of the Department of Cardiology Baylor College of Medicine/St. Luke's Episcopal Hospital is based upon a stated interest in additional training in the subspecialty of Interventional Cardiology, demonstrated aptitude during Internal Medicine Residency training, Cardiovascular Disease training, academic credentials, communication skills, motivation and integrity. The selection is not influenced by race, gender, age, religion, color, national origin, disability, or veteran status. The selection of Interventional Fellows for the added certification programs (Interventional Cardiology) is via personal invitation. A subcommittee is established by the Program Director to assist him/her in the selection process of qualified applicants for training in Cardiology at Baylor College of Medicine/St. Luke's Episcopal Hospital. The process is as follows:

14. Applicants are eligible for appointment with the following qualifications:
 - a. Medical School
 - i. Graduates of medical schools in the United States, and Canada accredited by the LCME.
 - ii. Graduates of colleges of osteopathic medicine in the United States accredited by the American Osteopathic Association.
 - iii. Graduates of medical schools outside the United States and Canada who meet one of the following qualifications:
 - iv. Have received a valid certificate from the ECFMG.
 - v. Have a full and unrestricted license to practice medicine in a US licensing jurisdiction.
 - b. Graduates of ACGME accredited Internal Medicine Residency training program providing eligibility for specialty board certification.
 - c. Graduates of ACGME accredited Cardiovascular Disease Fellowship training program providing eligibility for subspecialty board certification.
15. The applicant's application is reviewed by the Program Director and/or his/her designee.
16. The applicant is interviewed by three or more faculty, the Program Director and one or more active fellows.
17. The Program Director, with the assistance of the Cardiology Fellow Selection Committee, establishes the rank order of applicants.
18. The Program Director provides the selected applicants with a contract for one year of training at the PG7 level (fourth year of Cardiology Fellowship training) to be effective following the successful completion of a Clinical Cardiology Fellowship.
19. The applicant must qualify for a Texas Educational Permit or have an active Texas license to practice medicine.

The goal of the selection committee is to select and match with the best-qualified applicants for the program based on factors as outlined above.

RESIDENT PROMOTION / REAPPOINTMENT

Cardiology Fellows will be promoted from the PG4 to graduation if they successfully complete their current level of training. Their progress is monitored utilizing monthly, quarterly, and semi-annual evaluations. In addition, the Program Director and each faculty will monitor each resident to determine any sudden change in the resident's progress.

Residents who are having difficulty will be discussed at a Department of Cardiology Education Committee meeting (scheduled) to determine their status/recommendations and/or determine action. The resident may be placed in one of the following categories:

1. No action needed
2. Academic warning
3. Academic probation (GME Policy 25.1.14 and 25.1.15)
4. Academic suspension (GME Policy 25.1.16)
5. Academic dismissal (GME Policy 25.1.17)

Notification of intent to reappoint or not reappoint shall be made no later than four months and no earlier than seven months before completion of the resident's term of appointment, provided that the resident is not on probationary status. Reappointment is conditioned upon the resident's appropriately and successfully completing training for the current year and continuing to meet the standards of the program and department. Upon receipt of an offer of reappointment, the resident shall notify the department chair of his/her intent to accept or decline the reappointment within 14 calendar days of receipt.

The determination to reappoint or not to reappoint a resident is made by the department chair or his/her designee and is not subject to appeal. Reappointment without promotion may be offered if a resident needs to repeat all or part of a year. This, also, is not subject to appeal.

RESIDENT PROMOTION / REAPPOINTMENT

Electrophysiology Fellowship is a one-year training program and has no promotion element to it. Fellows' progress is monitored utilizing monthly, quarterly, and semi-annual evaluations. In addition, the Program Director and each faculty will monitor each resident to determine any sudden change in the fellow's progress.

Fellows who are having difficulty will be discussed at a Department of Cardiology Education Committee meeting (scheduled) to determine their status/recommendations and/or determine action. The fellow may be placed in one of the following categories:

6. No action needed
 7. Academic warning
 8. Academic probation (GME Policy 25.1.14 and 25.1.15)
 9. Academic suspension (GME Policy 25.1.16)
- Academic dismissal (GME Policy 25.1.17)

RESIDENT PROMOTION / REAPPOINTMENT

Interventional Fellowship is a one year fellowship with no need for promotion. Their progress is monitored utilizing monthly, quarterly, and semi-annual evaluations. In addition, the Program Director and each faculty will monitor each fellow to determine any sudden change in the fellow's progress.

Fellows who are having difficulty will be discussed at a Department of Cardiology Education Committee meeting (scheduled) to determine their status/recommendations and/or determine action. The fellow may be placed in one of the following categories:

10. No action needed
11. Academic warning
12. Academic probation (GME Policy 25.1.14 and 25.1.15)
13. Academic suspension (GME Policy 25.1.16)
14. Academic dismissal (GME Policy 25.1.17)

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Position Descriptions for Residents

Organization: Baylor College of Medicine
Location: Houston, TX
Organization Type: Medical School
Title: Resident Position Description (**Cardiovascular Disease Training Program 2**)

XIX. Qualifications

Candidates for residency training positions at Baylor College of Medicine Cardiovascular Disease Training Program 2 must have attained an M.D., D.O., and have completed an ACGME approved Internal Medicine residency training program. All international medical graduates must hold a valid ECFMG certificate. All candidates must meet requirements to be credentialed by Baylor College of Medicine and granted a Physician's In-Training Permit by the Texas State Board of Medical Examiners.

Overview:

The job of a resident in the Baylor College of Medicine Cardiovascular Disease Training Program 2 involves a combination of didactic exercises (**academics**) and provision of cardiovascular medical and procedural healthcare (**service**) to patients participating in the program. Residents are also encouraged to undertake critical review and investigation of specific cardiovascular diseases or physiology (**research**) during their training.

Residents in Baylor College of Medicine Cardiovascular Disease Training Program 2 undertake a three-year curriculum, in accordance with ACGME requirements. These curricula are designed to assure well-rounded didactic and clinical experiences to develop the competence of residents in the six areas of Core Competence outlined by the ACGME. Successful completion of the appropriate curriculum leads to credentials permitting the graduate to apply to sit for the American Board of Internal Medicine qualifying examinations.

The following description focuses primarily on the service expectations of the resident; complete descriptions of the academic curriculum are on file in the residency offices and with the Cardiovascular Disease Residency Review Committee of the ACGME.

Specific Duties and Expectations:

Each Post-Graduate Year (PGY), or level of training, includes specific competency and duty expectations, and residents undertake progressively more responsibility (graduated levels of responsibility) in patient care and educational activities.

PGY4 – 7: During a ½ day weekly outpatient clinic, the fellow is responsible for primary patient evaluation and management decisions on new patients as well as those scheduled for on-going follow-up and continuity of care. Patient evaluation and management decisions will be reviewed with the supervising physician. The fellow is responsible for necessary chart documentation.

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PGY-4:

Residents in their fourth and fifth post-graduate year complete a series of "core" rotations as set forth by ACGME guidelines and are expected to perform the duties required of any resident on those services.

Under supervision from faculty and upper level residents, PGY-4 residents are expected to participate in and/or develop specific procedural capabilities (initial competence) in the following areas of inpatient and outpatient care.

1. Performing and documenting: comprehensive medical histories, physical examinations.
2. Developing initial evaluation and treatment plans for cardiovascular diseases.
3. Writing appropriate orders for laboratory, imaging and other evaluation instruments for medical disorders
4. Writing orders for appropriate medications
5. Keeping accurate regular progress notes
6. Assuring that patient needs are appropriately addressed
7. Supervising medical students in their assigned duties
8. Working with and communicating effectively in multidisciplinary treatment teams
9. Maintaining professional decorum
10. Call duty during the PGY4 year consists of primary responsibility to the coronary care unit. This includes the admission of patients who have been assigned to the coronary care unit. Additional responsibilities include response to calls for resuscitation from cardiovascular collapse and urgent management of hemodynamic instability. They are responsible for the performance of necessary, emergency procedures and interpretation of results with the advice or supervision of the attending physician.
11. Maintaining BLS and ACLS certification and providing those emergency services as necessary
12. Interpretation of Electrocardiograms
13. On the imaging and diagnostic services, the PGY4 fellow has primary responsibility for supervision of performance of diagnostic testing that may include treadmill testing, pharmacologic stress testing, echographic imaging and observation of magnetic resonance imaging. The PGY4 fellow is responsible for discussion of the risks and benefits of the planned procedure with the patient. PGY4 fellows will assist and learn the techniques and basic knowledge required for image

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interpretation and report generation with the assistance of upper level fellows and the supervising physicians.

14. Obtain familiarity with the performance and basic interpretation of cardiac catheterization.
15. Obtain minimal proficiency in the placement of temporary pacemaker leads and intra-aortic balloon pump.
16. Maintaining logs of clinical experiences with patients, including interpretation of ECG, exercise studies, echocardiograms, nuclear scintigraphy and catheterization.
17. The PGY4 fellow is responsible for the choice of a physician mentor who will assist in developing or associating the fellow with an ongoing or planned research project. The fellow is responsible for learning the necessary techniques and statistical knowledge base required to perform a research project. By the end of the PGY4 year, the fellow is expected to generate ideas for a new research project.

Attending or developing lectures, conferences, seminars and supervision specific to the assigned clinical rotation

PGY-5:

Under supervision from faculty and upper level residents PGY-5 residents will undertake more responsibility in all the areas listed for the PGY-4 (vs.). In addition to progressing toward full competence in these areas, PGY-5 residents will:

1. Receive greater responsibility in the performance of cardiac catheterization procedures.
2. The responsibility of upper level fellows on the coronary care unit rotation will be in the on-going management of patients on their clinical service who are admitted to the units. Their responsibilities will include daily management decisions and participation in teaching rounds. They will assist in the performance of necessary procedures and interpretation of results providing supervision to the PGY4 fellow and accepting the supervision and guidance of the attending physician.
3. The upper level fellow assigned to imaging/diagnostic rotations has primary responsibility for the initial image interpretation and preliminary report generation. The responsibilities also include assistance of the PGY4 fellow in performance of necessary diagnostic tests and introduction to the basic knowledge required for interpretation and report generation. During the echocardiography rotation, PGY5&6 fellows are responsible for a discussion of the risk/benefit of requested transesophageal echo studies with the patient. They are responsible for preparation of the patient and performance of the necessary diagnostic study under the supervision of the attending echo physician.
4. Upper level fellows are responsible for performance of on-going research projects and generation of new research projects when appropriate. They will be assisted

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by their mentor/supervising physician in arranging funding and pursuing the publication of research projects in a peer reviewed journal.

5. Upper level fellows are responsible on-call duty that occurs approximately three times monthly. The primary duty is performance of initial evaluation of patients referred to the chest pain evaluation unit. This responsibility includes performance of the initial history and physical examination, appropriate documentation and development of a diagnostic plan. These duties are carried out with the advice and supervision of the patient's attending physician. In addition, the upper level fellow has primary responsibility for the initial management of ST-segment elevation myocardial infarction that is recognized in the emergency center or in the hospital setting outside the coronary care unit. This responsibility includes the initial clinical evaluation and the development of a diagnostic plan, administration of medical therapy including thrombolytic drugs or the coordination of urgent transfer to the cardiac catheterization laboratory for primary revascularization. In the course of the initial evaluation of ST elevation myocardial infarction, the upper level fellow may be required to assist or be responsible for resuscitation from cardiovascular collapse secondary to ventricular dysrhythmia or heart block and may be required to assist or perform placement of intra aortic balloon pump, temporary pacemaker, arterial line or Swan Ganz monitoring catheter. The duties of the upper level fellow on-call do not include assistance with the performance of an initial diagnostic cardiac catheterization or revascularization procedure upon the patient with ST segment elevation myocardial infarction. All patient management decisions are discussed with the attending physician responsible for the patient in question.

PGY-6:

Residents in the PGY-6 have completed the "core" rotations and have had the opportunity to consider their wishes for more advanced training in the subspecialties of interventional cardiology, cardiac imaging, heart failure/transplantation, and electrophysiology. During the sixth year, they are able to schedule elective participation on rotations in their field of interest or to complete necessary training to be competent in the performance of diagnostic cardiac catheterization, echocardiography or stress nuclear scintigraphy. PGY-6 residents will have gained basic competence and skills in the areas listed above for PGY-4 and 5 residents.

Sites for these experiences include the St. Luke's Episcopal Hospital, St. Luke's Outpatient clinics, Ben Taub General Hospital and Houston VAMC.

PGY-6 residents continue to provide night call as outlined for PGY-5.

Elective possibilities include but are not limited to:

1. Interventional Cardiology
2. Advanced Echocardiography

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3. Advanced Nuclear Cardiology
4. Cardiac MRI/CT
5. Pediatric Cardiology
6. Heart Failure/Transplantation
7. Electrophysiology
8. Clinical Research

Individual interests/elective arrangements are accommodated whenever possible.

Job Scope

Residents are held to twenty-four hour accountability for the duties described above. The scope of the job requires frequent – at least daily during the workweek – communication with attending faculty, other residents, medical and allied health professions students, other members of the multidisciplinary health care team, and especially with patients and patients' families.

Residents are expected to provide care sensitive to and accounting for each patient's specific needs, capabilities and socio-cultural background. Residents have access to confidential and sensitive patient information and are required to protect the privacy of such information.

Working Conditions

Resident duties are performed in inpatient (hospital) and outpatient clinic settings at the institutions comprising the program. The nature of the work often involves high stress in a fast-paced environment, entailing long hours, occasional twenty-four hour call, interrupted sleep and quick, decisive action.

This job description is intended to only be a representative summary of the major responsibilities, expectations and duties for which residents are responsible. Residents may also be requested to perform other job related tasks appropriate to the discharge of specific rotational duties.

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Position Descriptions for Residents

Organization: Baylor College of Medicine
Location: Houston, TX
Organization Type: Medical School
Title: Resident Position Description (**Interventional Cardiology Training Program 2**)

XX. Qualifications

Candidates for residency training positions at Baylor College of Medicine Interventional Cardiology Training Program 2 must have attained an M.D., D.O., and have completed an ACGME approved Internal Medicine residency training program and a Cardiovascular Disease training program. All international medical graduates must hold a valid ECFMG certificate. All candidates must meet requirements to be credentialed by Baylor College of Medicine and granted a Physician's In-Training Permit by the Texas State Board of Medical Examiners.

Overview:

The job of a resident in the Baylor College of Medicine Interventional Cardiology Training Program 2 involves a combination of didactic exercises (**academics**) and provision of cardiovascular medical and procedural healthcare (**service**) to patients participating in the program. Residents are also encouraged to undertake critical review and investigation of specific aspects of cardiac intervention (**research**) during their training.

Residents in Baylor College of Medicine Interventional Cardiology Training Program 2 undertake a one-year curriculum, in accordance with ACGME requirements. This curriculum is designed to assure well-rounded didactic and clinical experiences to further develop the competence of residents in the six areas of Core Competence outlined by the ACGME. Successful completion of the appropriate curriculum leads to credentials permitting the graduate to apply to sit for the American Board of Internal Medicine examination for a certificate of added qualification.

The following description focuses primarily on the service expectations of the resident; complete descriptions of the academic curriculum are on file in the residency offices and with the Cardiovascular Disease Residency Review Committee of the ACGME.

Specific Duties and Expectations:

Residents undertake progressively more responsibility (graduated levels of responsibility) in patient care and educational activities during the year of added training.

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Responsibilities

- A. Pre-operative evaluation and preparation of the patient
- B. Screening and enrollment of patient in research protocols (assist research staff)
- C. Pre-operative evaluation of patient data and angiographic anatomy
- D. Equipment and patient preparation in the catheterization laboratory
- E. Execution of assigned technical role during procedure
- F. Post-procedure documentation, orders and patient management in lab
- G. Completion of database case report forms
- H. Post-procedural evaluation and management of the patient during inpatient recovery phase
- I. Collation and preparation of case material for teaching conferences
- J. Discussion of case issues and completion of case performance evaluation form with supervising attending staff
- K. Provide continuous procedural assistance to the Teaching Staff of interventional cardiologists **24 hours a day and 7 days a week**. Call coverage responsibility will begin after the work of the day is completed. Call coverage for each day will be rotated with a single fellow to cover each night. Weekend coverage will also be rotated equally.
- L. During a ½ day weekly outpatient clinic, the fellow is responsible for primary patient evaluation and management decisions on new patients as well as those scheduled for on-going follow-up and continuity of care. Patient evaluation and management decisions will be reviewed with the supervising physician. The fellow is responsible for necessary chart documentation.

Research Activities

- A. Individual research program – developed with staff and research division of THI
- B. Daily participation in patient screening and enrollment in research protocols
- C. Assist with entry and review of research database case report forms for protocol cases.

Residents in their seventh post-graduate year are assigned participation in scheduled and emergency cardiac interventions. Under supervision from faculty, residents are expected to participate in and/or develop specific procedural capabilities (initial competence) in the following areas of inpatient care.

1. Properly evaluate and manage a full range of patients prior to appropriately selected interventional therapy.
2. Effectively counsel patients and family members as to the procedures, indications, risks, benefits, and alternatives appropriate to anticipated interventional procedures.

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3. Properly interpret technical, angiographic, and clinical variables in planning the technical approach to interventional procedures, including advanced maneuvers to control procedural risk.
4. Choose appropriate catheter tools and techniques specific to the technical objectives of any interventional procedure.
5. Demonstrate appropriate understanding and use of pharmacologic agents for IV conscious sedation relevant to peri-procedural management of the patient.
6. Demonstrate appropriate understanding and use of adjunctive pharmacology for interventional cardiology including antiplatelet, antithrombotic, and anticoagulant therapies, including the management of their potential complications.
7. Reliably and effectively prosecute nominal risk level interventional procedures to successful conclusion as both primary and secondary operator, in all clinical settings: elective, unstable angina, and acute myocardial infarction.
8. Safely and reliably prosecute high-level procedures to a controlled conclusion as both primary and secondary operator, in all clinical settings.
9. Demonstrate a full understanding of procedural complications and their recognition and management, including adaptive ("bail-out") catheter revascularization techniques and hemodynamic support (pharmacologic and intra-aortic balloon pumping).
10. Demonstrate competence in the full range of vascular access skills for femoral, brachial, radial, and brachial cutdown approaches, as well as the post-procedural management of access sites and potential complications.
11. Demonstrate competence in the two-handed, three-station manual techniques for subselective coronary instrumentation relevant to interventional procedures.
12. Effectively select angiographic views and use imaging techniques appropriate to demonstrating a full range of target vessels and lesions.
13. Demonstrate appropriate application of shielding and other radiation exposure control techniques during a full range of procedures.
14. Demonstrate appropriate application of and technical competence in the use of special techniques, including"
 - a. Intravascular ultrasonographic imaging
 - b. Ablative techniques, e.g. Laser or Rotablator atherectomy
 - c. Coronary and vascular stenting
 - d. Mechanical and rheolytic thrombectomy
 - e. Intracoronary infusion therapy
 - f. Coronary pressure/flow dynamics
15. Effectively manage a full variety of patients in the post-procedural setting, demonstrating ability to recognize and treat complications, optimize recovery and convalescence, initiate appropriate secondary risk reduction therapies, understand and apply appropriate post-discharge clinical surveillance, and appropriately counsel patients and family members regarding medications, diet, activities, follow-up, and prognosis.

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16. Minimize his/her personal risk exposure to radiation, blood products, and occupational hazards of poor posture and body mechanics.
17. Present the results of their research project to the Cardiology Section in conference.
18. Understand and discuss the research activities of the Cardiology Section and of the field in general.
19. Justify the clinical and procedural approach to any patient in the context of established practice, ACC/AHA guidelines, and relevant published literature.
20. Understand and discuss the economics and cost-effectiveness of a patient's care and of any type of interventional cardiology procedure in general.

Job Scope

Residents are held to twenty-four hour accountability for the duties described above. The scope of the job requires ongoing communication with attending faculty, other residents, medical and allied health professions students, other members of the multidisciplinary health care team, and especially with patients and patients' families.

Residents are expected to provide care sensitive to and accounting for each patient's specific needs, capabilities and socio-cultural background. Residents have access to confidential and sensitive patient information and are required to protect the privacy of such information.

Working Conditions

Resident duties are performed in inpatient (hospital) and outpatient clinic settings at the institutions comprising the program. The nature of the work often involves high stress in a fast-paced environment, entailing long hours, occasional twenty-four hour call, interrupted sleep and quick, decisive action.

This job description is intended to only be a representative summary of the major responsibilities, expectations and duties for which residents are responsible. Residents may also be requested to perform other job related tasks appropriate to the discharge of specific rotational duties.

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Position Descriptions for Residents

Organization: Baylor College of Medicine
Location: Houston, TX
Organization Type: Medical School
Title: Resident Position Description **(Electrophysiology Cardiology Training Program 2)**

XXI. Qualifications

Candidates for residency training positions at Baylor College of Medicine Electrophysiology Cardiology Training Program 2 must have attained an M.D., D.O., and have completed an ACGME approved Internal Medicine residency training program and a Cardiovascular Disease training program. All international medical graduates must hold a valid ECFMG certificate. All candidates must meet requirements to be credentialed by Baylor College of Medicine and granted a Physician's In-Training Permit by the Texas State Board of Medical Examiners.

Overview:

The job of a resident in the Baylor College of Medicine Electrophysiology Cardiology Training Program 2 involves a combination of didactic exercises (**academics**) and provision of cardiovascular medical and procedural healthcare (**service**) to patients participating in the program. Residents are also encouraged to undertake critical review and investigation of specific aspects of cardiac intervention (**research**) during their training.

Residents in Baylor College of Medicine Electrophysiology Cardiology Training Program 2 undertake a one-year curriculum, in accordance with ACGME requirements. This curriculum is designed to assure well-rounded didactic and clinical experiences to further develop the competence of residents in the six areas of Core Competence outlined by the ACGME. Successful completion of the appropriate curriculum leads to credentials permitting the graduate to apply to sit for the American Board of Internal Medicine examination for a certificate of added qualification.

The following description focuses primarily on the service expectations of the resident; complete descriptions of the academic curriculum are on file in the residency offices and with the Cardiovascular Disease Residency Review Committee of the ACGME.

Specific Duties and Expectations:

Residents undertake progressively more responsibility (graduated levels of responsibility) in patient care and educational activities during the year of added training.

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Responsibilities

- 1) Evaluation and management of patients referred for electrophysiology assessment.
 - a) Performance of history and physical examination
 - b) Maintain appropriate documentation in the medical record.
- 2) Screening and enrollment of patient in research protocols (assist research staff)
- 3) Performance of invasive diagnostic and therapeutic electrophysiology procedures.
 - a) Pre-operative evaluation of patient data
 - b) Equipment and patient preparation in the catheterization laboratory
 - c) Execution of assigned technical role during procedure
 - d) Post-procedure documentation, orders and patient management in lab
 - e) Completion of database case report forms
- 4) Implantation of Pacemaker/ICD.
 - a) Preprocedure evaluation, appropriateness of indications and consideration of alternative treatment options.
 - b) Performance of device implantation in the cardiac catheterization laboratory, including intra-operative testing, proper surgical techniques, patient safety, radiation risk awareness, recognition and management of complications, and post operative care.
 - c) The CCEP resident will be directly involved as the primary operator in at least 75 cases and in a minimum of 150 cases performed annually of pacemaker and device (ICD) insertions.
 - d) Participation in Pacemaker Clinic follow-up evaluation and reprogramming implanted devices.
- 5) Collation and preparation of case material for teaching conferences
- 6) During a ½ day weekly outpatient clinic, the fellow is responsible for primary patient evaluation and management decisions on new patients as well as those scheduled for on-going follow-up and continuity of care. Patient evaluation and management decisions will be reviewed with the supervising physician. The fellow is responsible for necessary chart documentation.
- 7) In the last 6 months of training, the CCEP resident has teaching opportunities of his/her own. The CCEP resident may make his own teaching rounds one day a week with the housestaff. He also gives monthly conferences and deals on a daily basis with 18 regular cardiology residents with on-going one-on-one teaching.

Research Activities

- 1) Participation in research or scholarly activity is required. Time will be allotted to allow the CCEP resident to allocate 20% of his time to research. The CCEP resident is expected to author at least 3 papers during the year of training (not including case reports).
- 2) Daily participation in patient screening and enrollment in research protocols
- 3) Assist with entry and review of research database case report forms for protocol cases.

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Residents in their eighth post-graduate year are assigned participation in scheduled and emergency cardiac interventions. Under supervision from faculty, residents are expected to participate in and/or develop specific procedural capabilities (initial competence) in the following areas of inpatient care.

21. Properly evaluate and manage a full range of patients with cardiac rhythm disturbances.
22. Understand the pharmacology, indications and complications of anti-arrhythmic drug therapy.
23. Effectively counsel patients and family members as to the procedures, indications, risks, benefits, and alternatives appropriate to anticipated Electrophysiology procedures.
24. Properly interpret technical, electrocardiographic, and clinical variables in planning the technical approach to Electrophysiology procedures, including advanced maneuvers to control procedural risk.
25. Choose appropriate catheter tools and techniques specific to the technical objectives of any Electrophysiology procedure.
26. Demonstrate appropriate understanding and use of pharmacologic agents for IV conscious sedation relevant to peri-procedural management of the patient.
27. Demonstrate a full understanding of procedural complications and their recognition and management, including rhythm management and emergency pericardiocentesis.
28. Demonstrate competence in the full range of vascular access skills for femoral, subclavian, jugular and transseptal approaches, as well as the post-procedural management of access sites and potential complications.
29. Demonstrate appropriate application of shielding and other radiation exposure control techniques during a full range of procedures.
30. Demonstrate appropriate application of and technical competence in the use of special techniques, including"
 - g. Intracardiac ultrasound
 - h. Electrical mapping
 - i. Radiofrequency Ablation
 - j. Coronary sinus pacemaker lead implantation
31. Effectively manage a full variety of patients in the post-procedural setting, demonstrating ability to recognize and treat complications, optimize recovery and convalescence, initiate appropriate secondary risk reduction therapies, understand and apply appropriate post-discharge clinical surveillance, and appropriately counsel patients and family members regarding medications, diet, activities, follow-up, and prognosis.
32. Minimize his/her personal risk exposure to radiation, blood products, and occupational hazards of poor posture and body mechanics.
33. Justify the clinical and procedural approach to any patient in the context of established practice, ACC/AHA guidelines, and relevant published literature.

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Job Scope

Residents are held to twenty-four hour accountability for the duties described above. The scope of the job requires ongoing communication with attending faculty, other residents, medical and allied health professions students, other members of the multidisciplinary health care team, and especially with patients and patients' families.

Residents are expected to provide care sensitive to and accounting for each patient's specific needs, capabilities and socio-cultural background. Residents have access to confidential and sensitive patient information and are required to protect the privacy of such information.

Working Conditions

Resident duties are performed in inpatient (hospital) and outpatient clinic settings at the institutions comprising the program. The nature of the work often involves high stress in a fast-paced environment, entailing long hours, occasional twenty-four hour call, interrupted sleep and quick, decisive action.

This job description is intended to only be a representative summary of the major responsibilities, expectations and duties for which residents are responsible. Residents may also be requested to perform other job related tasks appropriate to the discharge of specific rotational duties.

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PATHWAYS FOR TRAINING

- A. General 3-years training as currently performed
- B. Interventional 2 years to complete core requirements
3rd year 6 months Cardiac cath inclusive of PV
4th year interventional training
- C. EP 2 years to complete core requirements
3rd year 10 months EP training centering upon PM/ICD
4th year EP training
- D. Heart Failure 2 years to complete core requirements
3rd year 10 months EP training centering upon PM/ICD
4th year HF pursuing UNOS certification
- E. Imaging 2 years to complete core requirements
3rd year 6 months Echo training, 4 months other modality
4th year Level 3 training for NUC, Echo or MRI
- F. ACHD 2 years core
3rd year ACHD including echo of ACHD
4th year ACHD