Description of Rotation or Educational Experience

The fellow is responsible for directing the daily operations on cardiology consultation service at Froedtert Memorial Lutheran Hospital (FMLH). The fellow serves as the initial contact, is to triage requests, and ensures that each request is appropriately addressed. When medical student and/or residents are rotating on the service, the fellow is responsible for supervising the resident or medical student in evaluation of the patients and for assisting in formation of management plans. If no resident or medical student is available then the fellow will personally perform these duties. The cardiology consult team will round daily on new and follow up patient with a cardiology attending. Once a finalized plan has been established, the fellow makes certain assessments and recommendations are communicated to requesting team.

The fellow must be available from 7 am through 5 pm each weekday to direct consultation service. Between 5 pm and 7 am on weekdays, new, emergency consultations or urgent issues on prior consultations will be the responsibility of the on-call fellow. All weekends are covered by rotating call among the fellows.

One faculty member is assigned to the cardiology consultation service for a 2 week period of time. The attending cardiologist will have daily teaching rounds with the entire team to staff all new and follow-up patients. An attending cardiologist is available 24 hours a day to assist the fellow with any consultation.

Patient Care

Goal
Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows are expected to:

Competencies
- Gain clinical experience in the consultation for evaluation and management of patients with, but not limited to, the following: chronic coronary heart disease, congestive heart failure, arrhythmias, acute myocardial infarction and other acute ischemic syndromes, lipid disorders, hypertension, cardiomyopathy, valvular heart disease, pulmonary heart disease and pulmonary embolism, peripheral vascular disease, infections and inflammatory heart disease, pericardial disease, and cardiovascular trauma.
- Gain clinical experience in the perioperative cardiovascular evaluation and management of patients undergoing noncardiac surgery
- Gain clinical experience in the evaluation and management of patients with: cerebrovascular disease; heart disease in pregnancy.

Objectives: First Year Fellows
- Gain a better understanding of the basic physiology of cardiovascular diseases including but not limited to: chronic coronary heart disease, congestive heart
failure, arrhythmias, acute myocardial infarction and other acute ischemic syndromes, lipid disorders, hypertension, cardiomyopathy, valvular heart disease, pulmonary heart disease and pulmonary embolism, peripheral vascular disease, infections and inflammatory heart disease, pericardial diseases, and cardiovascular trauma.

- Learn management of patients presenting with acute coronary syndromes and appropriate use of the catheterization laboratory for intervention when indicated.
- Learn indications and contraindications of elective cardioversion; use of temporary pacemakers, including transvenous and transcutaneous; and pericardiocentesis.
- Familiarize themselves with the presentation and management of acute and chronic heart failure.
- Become familiar with presentation and management of benign and malignant arrhythmias.
- Become familiar with indications for cardiac testing as it pertains to their patients including but not limited to: stress testing, echocardiography (TTE and TEE), cardiac catheterization (right and left), and electrocardiograms.
- Learn appropriate triage of patients for emergency, urgent or routine consultation, as well as criteria for transfer to cardiology inpatient service.

**Objectives: Second and Third Year Fellows**

- Master the physiology and pathophysiology of cardiovascular diseases including but not limited to: chronic coronary heart disease, congestive heart failure, arrhythmias, acute myocardial infarction and other acute ischemic syndromes, lipid disorders, hypertension, cardiomyopathy, valvular heart disease, pulmonary heart disease and pulmonary embolism, peripheral vascular disease, infections and inflammatory heart disease, pericardial disease, and cardiovascular trauma.
- Become proficient in the perioperative cardiovascular evaluation and management of patients undergoing noncardiac surgery
- Become proficient in the evaluation and management of patients with: cerebrovascular disease; heart disease in pregnancy.
- Co-manage with the attending patients presenting with acute coronary syndromes and appropriately triage to the catheterization laboratory for intervention when indicated.
- Master appropriate triage of patients for emergency, urgent or routine consultation, as well as criteria for transfer to cardiology inpatient service.
- Master management of patients presenting with acute coronary syndromes and appropriate use of the catheterization laboratory for intervention when indicated.
- Master indications and contraindications of elective cardioversion; use of temporary pacemakers, including transvenous and transcutaneous; and pericardiocentesis.
- Independently determine appropriate necessity for cardiac testing as it pertains to their patients including but not limited to: stress testing, echocardiography (TTE and TEE), cardiac catheterization (right and left), and electrocardiograms.
- Independently manage acute and chronic heart failure and benign and malignant arrhythmias.
• Independently lead the team on review clinical data (review of catheterization films, echocardiograms, stress tests, radiologic studies).

Medical Knowledge

Goal
Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows are expected to:

Competencies
• Enhance their knowledge of the following content areas: cardiovascular anatomy; cardiovascular physiology; cardiovascular metabolism; cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular drugs upon cardiovascular function; cardiovascular pathology; genetic causes of cardiovascular disease.
• Become familiar with diagnostic techniques, including: magnetic resonance imaging; fast computed tomography; positron emission tomography.
• Gain clinical experience in the interpretation of the following: chest x-rays; electrocardiograms; radionuclide studies of myocardial function and perfusion.

Objectives: First Year Fellows
• Understand the indications, contraindications, complications, and limitations of cardiac testing including electrocardiogram, transthoracic echocardiogram, transesophageal echocardiogram, stress testing, coronary CT scan, cardiac MRI, coronary angiography and invasive hemodynamic assessment.
• Understand the clinical application of results from Understand the indications, contraindications, complications, and limitations of cardiac testing including electrocardiogram, transthoracic echocardiogram, transesophageal echocardiogram, stress testing, coronary CT scan, cardiac MRI, coronary angiography and invasive hemodynamic assessment.

Objectives: Second and Third Year Fellows
• Demonstrate advanced understanding of the following content areas: cardiovascular anatomy; cardiovascular physiology; cardiovascular metabolism; cardiovascular pharmacology, including drug metabolism, adverse effects, indications, the effects on aging, relative costs of therapy, and the effects of non-cardiovascular drugs upon cardiovascular function; cardiovascular pathology; genetic causes of cardiovascular disease.
• Properly utilize and integration of diagnostic techniques, including: electrocardiogram, transthoracic echocardiogram, transesophageal echocardiogram, stress testing, coronary CT scan, cardiac MRI, coronary angiography and invasive hemodynamic assessment.

Practice-Based Learning and Improvement

Goal
Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Fellows are expected to develop skills and habits to be able to:

Competencies
• Identify strengths, deficiencies and limits in one’s knowledge and expertise.
• Set learning and improvement goals.
• Incorporate formative evaluation feedback into daily practice.
• Locate, appraise and assimilate evidence from scientific studies related to their patients’ health problems.
• Use information technology to optimize learning.
• Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of the fellow’s teaching abilities by faculty and/or learners.

Objectives: First Year Fellows
• Set learning and improvement goals in conjunction with the attending at the beginning of the month.
• Learn about the resources available including textbooks and the internet to implement optimal patient care.
• Share data and knowledge obtained from literature or internet searches with the team as teaching points.
• Receive verbal feedback routinely and utilize that feedback to optimize performance.

Objectives: Second and Third Year Fellows
• Set learning and improvement goals at the beginning of the month.
• Independently use available resources to quickly and efficiently obtain critical information vital to optimal patient care.
• Assist housestaff and students in utilizing available resources to obtain information and scientific studies to share with the team.
• Use information obtained to effectively educate students, housestaff, patients, and their families.
• Receive verbal feedback and utilize routinely to optimize performance.
• Give routine verbal feedback to housestaff and student so they may optimize their performance.

Systems Based Practice
Goal
Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Fellows are expected to:

Competencies
• Work effectively in various health care delivery settings and systems relevant to cardiovascular medicine.
• Coordinate patient care within the health care system relevant to cardiovascular medicine.
• Incorporate considerations of cost awareness and risk-benefit analysis in patient care.
• Advocate for quality patient care and optimal patient care systems.
• Work in interprofessional teams to enhance patient safety and improve patient care quality.
Objectives: First Year Fellows

- Coordinate care with referring service as well as in-hospital services such as pharmacy, social work, and case management to improve patient care and ensure safety.
- Assist in the communication between the team and referring service to improve the quality of patient care.

Objectives: Second and Third Year Fellows

- Achieve clear communication between the team and referring team to enhance patient care and safety.
- Master techniques for enhancing adherence with consultative recommendations.
- Assist in coordinating safe and effective transfer of patients from consultation service to inpatient cardiology service.

Professionalism

Goal
Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Fellows are expected to demonstrate:

Competencies

- Compassion, integrity, and respect for others.
- Responsiveness to patient needs that supersedes self-interest.
- Respect for patient privacy and autonomy.
- Accountability to patients, society, and the profession.
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Objectives: First Year Fellows

- Be readily available to members of the team to review new consultations.
- Learn to apply evidence based medicine to patient care.
- Show respect for patients and peers in daily interactions.

Objectives: Second and Third Year Fellows

- Independently staff all new consultations prior to attending rounds.
- Practice sound evidence based medicine.
- Continue to treat patients and peers with the utmost respect.

Interpersonal and Communication Skills

Goal
Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Fellows are expected to:

Competencies

- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds.
- Communicate effectively with physicians, other health professionals, and health related agencies.
- Work effectively as a member of leader of a health care team or other professional
Maintain comprehensive, timely, and legible medical records.

Objectives: First Year Fellows
- Learn to communicate effectively with the faculty and other members of the patient care team.
- Learn to communicate effectively with patients and their family members.
- Learn to deliver bad news in an effective and compassionate fashion.

Objectives: Second and Third Year Fellows
- Actively teach medical students and housestaff independent of attending rounds.
- Participate in teaching ECG rounds.
- Communicate effectively with faculty, housestaff, patients, and their families.
- Lead family meetings and teach residents to deliver bad news in a compassionate way.

Teaching Methods
The primary teaching method will be through daily teaching rounds. The fellow is expected to round with the attending physician on a daily basis. These rounds will be patient-based sessions in which current cases are presented as a basis for discussion of such points as interpretation of clinical data, pathophysiology, differential diagnosis, specific management of the patient, the appropriate use of technology, the incorporation of evidence and patient values in clinical decision making, and disease prevention.

The fellow is expected to review studies such as catheterization, echocardiograms, stress tests, daily labs, and radiologic studies with the attending to enhance their learning. Daily interaction with interventionalists, echocardiographers, and electrophysiologists will also provide opportunity for further education.

The fellow will be expected to practice sound evidence based medicine and will be given access to resources to be utilized to enhance this practice. Resources include citations of important literature and use of hospital and MCW-based information technology.

Assessment Method (Fellows)
Fellows are given verbal feedback on their performance by the faculty throughout the rotation and in particular at the end of each 2 week block. Final evaluations by each attending will be based on the general ACGME competencies of patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, systems-based practice, and professionalism. A formal written evaluation will be entered by the faculty into New Innovations. It will then be reviewed and signed by the fellow.

Fellows will also be evaluated in regards to their teaching skills by the housestaff and students.

Fellows are also evaluated through use of the 360 evaluation system, where feedback from nursing, social work, case management, patients, and others can be used to assess
and refine performance. Specifically communication, systems-based practice, and professionalism can be further assessed.
**Assessment Method (Program Evaluation)**

Fellows will assess the rotation overall as well as their attending physicians. These will be written evaluations which will be shared with the Chair of the Division as well as the Fellowship Program Director. Feedback from the fellows will allow for correction of any perceived deficiencies in learning opportunities on this rotation.

**Level of Supervision**

One faculty member is assigned to the inpatient cardiology service for a 2 week period of time. This faculty will be the attending of record on all inpatient and emergency room cardiology consultations and will have primary supervisory responsibility for the cardiology fellow on service.

**AGREEMENT**

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