Introduction

The Cardiovascular Medicine Consult Service has core membership of an attending faculty member and three nurse practitioners fully trained in cardiovascular consultation. Members of the Fellowship Program rotate through the service for one month during the first year of fellowship and one month during the third year of fellowship. In addition, residents in medicine may take an elective rotation and senior medical students may take an elective rotation on the service.

Role of the First-Year Fellow

The first-year fellow will attend appropriate didactic lectures during the core lecture series that discuss principles of general cardiovascular evaluation and treatment. In addition, the fellow will attend Grand Rounds on an ongoing basis over the entire three years to gain additional knowledge in general cardiology and patient care.

Clinical Experience

During the first month the fellow will be expected to perform new formal evaluations of patients requested by their respective services for Cardiovascular Medicine consultation. The fellow will perform a comprehensive history and physical, with particular focus placed on the problem being addressed and the cardiovascular implications. The fellow will formulate a plan for evaluation and utilization of appropriate testing procedures and then formulate a series of recommendations based upon the information obtained. The fellow will be expected to present his/her findings to the attending physician and other members of the consultation team, and when a consensus is reached about clinical care, communicate effectively with the appropriate groups requesting consultation. The fellow will also be expected to longitudinally follow all of his/her new patients throughout the entire hospital course with appropriate follow-up and further recommendations as needed as the hospital course progresses. Similarly, the fellow will learn appropriate techniques of preoperative evaluation of patients and appropriate determination and assessment of risk for various types of surgery. While on the service, if residents and students are present, it will be expected that the fellow participate in active teaching of principles of cardiovascular consultation to the residents and the students, utilizing an appropriate knowledge base and also the current literature and guidelines. The fellow may be called upon to perform teaching sessions on various topics with the remainder of the team.

Core Competencies of Month 1:
1. Learn how to and demonstrate proficiency in teaching and leading additional members of the team.
2. Demonstrate mastery of basic principles of performing consultation and documenting appropriately the consultation evaluation and recommendations in the electronic medical record.
3. Master the skills of longitudinal care and communication utilizing direct communication techniques with the consulting team and also the electronic medical record.
4. Read and review key information from the literature (listed at the end of this set of Goals and Objectives) and identify additional resources in the literature depending upon the pathophysiology of the cases being consulted on.
5. Learn appropriate communication techniques between members of the team and also members requesting the consultation.

Month 2, occurring during the third year:
1. In addition to the goals and objectives for month 1, the fellow now should demonstrate considerable independence in performance of consultation. He/she should be capable of actively directing and running the Consultation Service. In this role, he/she should demonstrate excellent teamwork among all members of the Consult team and be able to use the attending physician more as a resource and indirect supervisor than a direct supervisor as in month 1.

On-Call Consultative Experience

All members of the Fellowship Program rotate through being on call. A significant portion of the on-call experience is inpatient cardiovascular consultation. In this role, the fellow should utilize all the principles noted above during Month 1. In addition, the fellow will be expected to fully communicate and discuss evaluation and findings with the on-call attending Cardiovascular Medicine faculty physician, formulate a plan, formulate a diagnostic evaluation acutely as necessary, rapidly communicate with the consulting team, make determinations about disposition of the patient, and contact appropriate on-call physicians of the Cardiovascular Medicine team to facilitate appropriate care as needed. The fellow will also be expected to communicate effectively with the Inpatient Consultation Service by placing appropriate written material in the electronic record and directly communicating the morning following call with the consultation team, demonstrating effective techniques in transitions of care as needed.

Ambulatory Consultative Experience

The primary vehicle for ambulatory consultation will be the longitudinal care clinics that shall be performed a minimum of 40 half days per year with a minimum of 4-8 patients seen in the clinic. The fellow will see new consultation requests that appear in the clinic and evaluate and staff these consultations with his/her clinic mentor, as noted above under Month 1. The fellow will be expected to learn appropriate ambulatory communication techniques. The fellow shall organize care for outpatient ambulatory evaluation and then follow up on the results of the evaluation performed, communicate with his clinic mentor about the findings, and further determine further evaluation and care steps in the patient’s treatment. The fellow should take an active role in communicating the findings to the patient and family in addition to individuals who requested the consultation. Over the longitudinal course of the clinic, the fellow should follow up the
patient’s progress, particularly noting the results of further testing, further major diagnostic or therapeutic procedures, and also follow up after surgical procedures.

The fellow will remain for one academic year with one clinic mentor in a general cardiology practice clinic. In the second year, the fellow will choose a new mentor for clinic. During the third year, six months of the third year will be spent in the Adult Congenital Cardiovascular Medicine Clinic, the other six months will be a chosen General Cardiovascular Medicine Clinic with a third mentor. As the fellow moves through the three years of the program, the mentors will allow graded levels of responsibility for the fellow.

Evaluation

An electronic evaluation form has been developed specifically for the inpatient consultative experience and also for the ambulatory clinic experience.

A complete set of core competency components and curriculum milestones for training in consultative care are listed below and are modified from the listing in the COCATS 4 Task Force 1 document.

Medical Knowledge
1. Know the major cardiovascular risk stratification tools and the principles of primary and secondary cardiovascular disease prevention.
2. Know the roles of genetics and family history and the environmental and lifestyle factors in the development and clinical course of cardiovascular disease.
3. Know the effects of age on cardiovascular function, response to medications, and in the risks of diagnostic and therapeutic procedures.
4. Know the differential diagnosis of chest pain and the distinguishing features of the various etiologies.
5. Know the cardinal findings and differential diagnosis of palpitations, lightheadedness, and syncope, and the distinguishing features of the various etiologies.
6. Know the cardinal findings and differential diagnosis of dyspnea.
7. Know the differential diagnosis of peripheral edema and the distinguishing clinical features of the various etiologies.
8. Know the roles of kidney, hepatic, pulmonary, hematologic, rheumatologic, and endocrine disorders in the development, manifestations, and responses to treatment in patients with cardiovascular disease.
9. Know the clinical pharmacology of cardiovascular medications, and drug-drug interactions of cardiac and noncardiac medications, including in special populations and in patients with relevant comorbidities.
10. Know the roles of lifestyle, activity level, body mass, nutrition, alcohol and/or drug use in cardiovascular risk and disease. I
11. Know the potential cardiovascular toxicity and side effects of major classes of drugs used for the management of patients with common medical conditions, including antimicrobial agents, immune system modulators, chemotherapeutic agents, and antiparkinsonian drugs.
13. Know the guideline recommendations for blood pressure, blood glucose, and lipid management in diverse patient populations with and without cardiovascular disease.
14. Know the appropriate use indications for cardiovascular screening studies, including carotid and abdominal ultrasound (or other imaging) modalities.
15. Know the differential diagnosis and distinguishing characteristics of heart murmurs and bruits.
16. Know the characteristic clinical manifestations, differential diagnosis, and appropriate testing for peripheral vascular disease.
17. Know the mechanisms and cardinal symptoms and findings of stroke, transient cerebral ischemia, and dementia.
18. Know the principles, modalities, and appropriate indications for palliative care.

**Evaluation Tools:** chart-stimulated recall, conference presentation, direct observation, in-training exam

**Patient Care and Procedural Skills**
1. Skill to effectively and efficiently perform an initial outpatient cardiovascular consultation and establish a differential diagnosis.
2. Skill to appropriately utilize diagnostic testing – both for initial diagnosis and for followup care.
3. Skill to integrate clinical and testing results to establish diagnosis, assess cardiovascular risk, and formulate treatment and follow-up plans.
4. Skill to appropriately obtain and integrate consultations from other healthcare professionals in a timely manner.
5. Skill to recognize acute cardiovascular disorders or high-risk states that require immediate treatment and/or hospitalization, and prioritize management steps in patients with complex or multi-component illness.
6. Skill to establish an effective medical regimen and monitor for side-effects, intolerance or noncompliance, and patient safety.
7. Skill to assess the cardiovascular risks associated with recreational and/or competitive sports for individual patients and to counsel patients about levels of physical activity appropriate to their cardiovascular health in the context of disease prevention; rehabilitation; and promotion of longevity, functional capacity, and quality of life.
8. Skill to effectively carry out chronic disease management in patients with chronic ischemic heart disease, hypertension, heart failure, and peripheral vascular disease. I
9. Skill to coordinate ambulatory and longitudinal follow-up care.
10. Skill to effectively facilitate transition of care from hospital to ambulatory or intermediate care settings.
11. Skill to perform preoperative assessments for noncardiac procedures in patients with cardiovascular disease.

**Evaluation Tools:** chart-stimulated recall, conference presentation, direct observation

**Systems-Based Practice**
1. Effectively lead or participate in team-based care in patients with or at risk of developing cardiovascular disease.
2. Effectively facilitate transitions of care.
3. Effectively utilize electronic medical record systems, including clinical protocols and treatment/evaluation prompts.
4. Effectively and appropriately use remote communication tools in the care of patients.
5. Appropriately utilize and work with cardiac rehabilitation and intermediate care facilities.
6. Recognize and address social, cultural, and financial barriers to patient compliance.

**Evaluation Tools:** direct observation, multisource evaluation

**Practice-Based Learning and Improvement**
1. Utilize point-of-care electronic resources to provide up-to-date clinical information and guideline-driven evaluation and treatment.
2. Identify gaps and carry out personalized education activities to address them.
3. Integrate validated performance and patient satisfaction measures into clinical practice to foster continuous quality improvement.

**Evaluation Tools:** chart-stimulated recall, direct observation, reflection and self-assessment

**Professionalism**
1. Practice patient-centered care with shared decision-making and appreciation of patients’ values and preferences.
2. Incorporate appropriate use criteria and risk-benefit considerations in treatment decisions.
3. Practice in a manner that fosters patient benefit above self-interest and avoids conflict of interest.
4. Interact respectfully with patients, families, and all members of the healthcare team, including ancillary and support staff.

**Evaluation Tools:** chart-stimulated recall, direct observation, multisource evaluation

**Interpersonal and Communication Skills**
1. Communicate effectively with patients and families across a broad spectrum of ethnic, social, cultural, socioeconomic, and religious backgrounds.
2. Exhibit sensitivity and empathy in dealing with life-threatening and end-of-life issues.
3. Communicate effectively and in a timely manner with primary care and other referring or collaborating members of the healthcare team.

**Evaluation Tools:** direct observation, multisource evaluation
Suggested Reading Sources on Cardiovascular Consultation