

## HEART STATION

### Mission Statement

The mission of the Heart Station is to provide excellence in interpretation services. Accurate interpretation of electrocardiograms, Holter recordings and exercise tolerance tests contribute significantly to the diagnosis and management of patients with cardiac disorders.

### Statement of Educational Goals

The curriculum is designed to promote six broad goals based on the six ACGME core competencies;

- (1) Medical Knowledge; exposure to electrocardiograms with a broad range of acute and chronic cardiovascular and medical problems; application of an investigatory and analytic thinking approach to electrocardiograms; application of the basic and clinically supportive sciences in the interpretation of electrocardiograms. In addition to the exposure of the fellows/residents to many 12-lead and rhythm strip ECG tracings, Holter ECGs, transtelephonic arrhythmia ECGs, and exercise ECGs throughout their three year fellowship, frequent ECG conferences, both unknown ECG-oriented sessions and subject-oriented didactic sessions, will be held on the average of 3 to 4 conferences ( each one hour in duration ) per month. These conferences will be used to further enhance the goals specified above.
- (2) Patient Care; expert selection of various diagnostic ECG tests and referral for intervention, restrained by considerations of risk, benefit and cost ; accurate and physiologically-reasoned diagnosis.
- (3) Professionalism; effective, mutually satisfying communication with patients, families and other physicians and allied health care personnel; maintenance of highest ethical standards and strict privacy when discussing patient case plans with other providers.
- (4) Interpersonal and Communication skills; in assuming the new role of a consultant, this will be critical. Effective communication with other non-cardiology physicians, nurses and allied professions in working with them to develop a plan of care for patients for whom the consultation fellow does not assume primary care responsibilities.
- (5) Practice Based Learning; Using information technology, literature sources and other available resources to practice evidence based medicine based on sound medical principles, guidelines and best practices, while being still able to individualize this for a particular patient's circumstances.
- (6) Systems Based Learning; During interaction with other medical services and providers in the fellow's and resident's new role and a consultant, it will be

important to learn how their care delivery systems work. Understanding this will be crucial to the fellow's and resident's ability to getting consultative recommendations implemented in a timely manner.

#### General Statement of Educational Objectives for Fellows

Direct supervision and teaching of electrocardiography on a one-to-one basis with faculty attending is an important part of the rotations on the Consultation, CCU, and Electrophysiology rotations. In addition, the first year fellow on the echocardiography and non-invasive rotation is specifically responsible for timely interpretation of routine pre-operative ECG's. Dr. Burr Hall cosigns and provides timely feedback on these records and is available for teaching purposes as well.

A one-hour ECG workshop (both unknown ECG oriented and subject oriented sessions) is conducted three to four times per month by unit faculty. Tracings for this exercise are selected from teaching files or current records for maximal instructive impact. Direct interactive participation by all the fellows, rather than a didactic format, has proven effective.

Electrocardiography is a skill fundamental to the field of cardiology, and all fellows will be expected to develop high level expertise in this area. During the entire three-year experience, it is expected that each fellow will accumulate a very large individual repertoire of ECG exposure and develop the competence required that is consistent with serving as a cardiology consultant. A suggested numerical target is evaluation of approximately 3600 ECGs during the three years of fellowship.

## General Statement of Expectations of Fellows

Experience in ECG, Holter recordings, transtelephonic monitorings, and Nuclear tests will be obtained as part of the Consultation Service and CCU rotations. Fellows on the Consultation and CCU Services will interact with attending physicians, other consultants, medical residents, and medical students. The third year fellow is expected to assume a major role for informal teaching of electrocardiography and related procedures and to provide more formal didactic educational exercises where appropriate.

## Specific Procedures

### Daily Interpretation of routine, pre-operative ECGs

Interpretation of routine ECGs and Holter tape recordings are done Monday through Friday. The first year Echo Service fellow is responsible for timely evaluation of these pre-op ECGs and will be paged by the Heart Station when tracings are available. There are approximately 30 such ECGs each day. They should receive immediate attention. Prompt interpretation of pre-operative ECGs is important in terms of the smooth flow of patient assessment on the surgical and anesthesia services, and this responsibility in particular needs to be given high priority. These pre-operative ECGs generally originate in the Ambulatory Surgical Center and arrive in the Heart Station late in the morning and throughout the afternoon. The first year echo fellow should make every effort to complete the process of interpretation by 3:30 pm, so that review and co-signing by Dr. Hall can then take place. These tracings generally are completed and returned on the same day they are received, and all must be finalized before 10:00 am on the following day at the latest.

Strong Memorial Hospital has a computer-based interpretation and storage system for ECG's that requires careful over-reading by a physician. Editorial changes are commonly required, especially in the area of rhythm analysis and comparison with prior tracings. These changes in the computer generated report are made using either a coded system of editing (posted in the reading area) or handwritten changes. It is not necessary to rewrite the whole report -- only changes or additions. ECGs are classified as: Normal (NO), Abnormal (AB) or Borderline (BO). Technically unacceptable records are classified as DE (Defective electrocardiogram). If appropriate, be sure to change this classification when the ECG report is finalized.

There is a faculty member assigned to ECG interpretation on a weekly rotational basis. Dr. Hall will also be available for assistance, if necessary. If there are any questions regarding this, please check with Dr. Hall, Director of the Heart Station, or Laura Butler, Supervisor of the Heart Station.

### Exercise Treadmill Testing (ETT)

During the rotation on the Clinical Consultation Service, first and third year fellows perform basic exercise treadmill tests on in-patients and outpatients referred for evaluation. During the formal introductory lecture series (“Core Lecture Series”) given by faculty in the first few months of fellowship, basic instruction on normal and abnormal exercise physiology, indications for and interpretation of standard exercise tests, safety procedures and protocols, and a reading list are discussed in detail. In addition, hands-on experience in the course of the three-year fellowship will provide the opportunity for each fellow to perform between 80 and 90 standard treadmill exercise tests. A limited number of bicycle ergometer and arm ergometer tests are also performed.

Responsibility for generating a complete written report and promptly informing the referring physician verbally of the result is part of this experience. Individual review of each exercise test result is carried out daily by a faculty member (Dr. Burr Hall in the majority of cases) and direct feedback is provided as needed individually to each fellow concerning these reports. Basic references dealing with multiple aspects of exercise stress testing have been compiled and are available to the fellows.

Staff

<u>NAME</u>	<u>OFFICE NUMBER</u>	<u>PAGE NUMBER</u>	<u>HOME NUMBER</u>
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Medical Staff

Bur Hall, M.D., Director	275-4780	2885	
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Other Cardiology Unit Faculty participate in ECG reading on a published rotational basis.

Support Staff

Laura Butler, Supervisor	275-3661	1081	
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Nursing Staff

Julene Wood, R.N.	275-3661	9040	
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Technical Staff

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Grace Ansini Holter Tech	275-7925		
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Kathy Eastman Pacer Tech	275-3663		
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Colleen Paradise Pacer Tech	275-3663		
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Lana Russ ECG Tech	275-3661		
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Credentials of the Medical Staff

Burr W. Hall, M.D.

University of Rochester School of Medicine and Dentistry, M.D.

Internal Medicine Residency, University of Virginia, Charlottesville, VA

Cardiovascular Disease Fellowship, University of Michigan Medical Center

Electrophysiology Fellowship Program, University of Michigan Medical Center