Cardiovascular Surgery (Elective)

Length:	4-weeks during PGY- 2 or PGY-3 year
Location:	The Queen's Medical Center
Additional Sites:	Kapiolani Medical Center for Women & Children, Hawaii Medical Center East, Kuakini Medical Center, Straub Clinic and Hospital
Primary Supervisor:	Carlos Moreno-Cabral, MD
Telephone Contact #:	524-5980 524-2575 (Physician's Exchange)

Continuing advances in cardiac surgery make it imperative that the general surgeon be familiar with techniques used in such surgery, as well as the diagnosis and treatment of peripheral vascular disease and/or injury. During this rotation, the Resident will develop an understanding and appreciation for cardiovascular anatomy and physiology, and the impact disease has on normal cardiovascular physiology. Residents will also be expected to develop an increasing awareness of the pathogenesis, pathophysiology, treatment, and outcome for the most frequent cardiac diseases. While increasing their knowledge in cardiovascular disease, Residents will also be developing the surgical skills appropriate for general surgeons.

Goals

Upon completion of the Cardiovascular Surgery rotation, the Resident will be familiarized with the discipline of cardiovascular surgery in theory and in practice.

Objectives

At the end of this rotation, the resident will be able to:

Medical Knowledge

1. Describe and discuss cardiovascular physiology and the influence of cardiovascular disease on normal physiology.
2. Know various operative approaches to the chest and understand indications for various preoperative studies of the chest and become familiar with their interpretation (Chest x-rays, angiography, echocardiograms, EKGs).
3. Demonstrate understanding of pathogenesis, pathophysiology, treatment, and outcome of the disease processes most frequently encountered in cardiovascular practice (coronary circulation, theories of plaque

development, indications for angioplasty versus bypass, choice of valvular procedures and operations, for example).

4. Understand and demonstrate knowledge of basic theory and physiology of the heart-lung machine (cardiopulmonary bypass) and ventricular assist devices.

Patient Care

1. Demonstrate an awareness of physical examination findings in cardiac diseases.
2. Continue to develop and improve technical skills in the Operating Room.
3. Demonstrate the ability to appropriately utilize the ICU for proper postoperative care and management of patients with cardiovascular instability from one or more of the following:

    a. Common arrhythmias.
    b. Tamponade (early and late).
    c. Low cardiac output.
    d. Excessive bleeding.
    e. Pulmonary problems.
    f. The impact of the surgery and underlying health problems.
    g. Low urine output.
    h. Central nervous system complications.

Systems-based Practice

1. Understand the multidisciplinary role of the Cardiac Surgeon, Nurses, and the Operating Room Team in the provision of safe and high quality cardiac surgery care.

Professionalism

1. Interact with patients and their families in a respectful, sensitive, and ethical manner.
2. Interact with other members of the Cardiac Surgery Team and ambulatory clinic personnel in a respectful, responsible, and professional manner.

Practice-based Learning and Improvement

1. Demonstrate ability to utilize scientific studies to provide high quality cardiac surgical care.
2. Appropriately utilize Hospital information technology systems to manage patient care, and to access on-line medical information to deliver high quality care.
3. Facilitate and supports the education of medical students, junior residents, and other healthcare team members.

Interpersonal and Communication Skills

1. Demonstrate skill in effective information exchange with patients, their families, and other members of the Cardiac Surgery Team.
2. Demonstrate ability for accurate and timely information exchange between other members of the healthcare team, both verbally and in writing, with appropriate use of the medical record.

Implementation

Cardiovascular surgery instruction occurs at all hospitals outlined above under the direct supervision of Dr. Carlos Moreno-Cabral. PGY-2 or PGY-3 Residents will participate in the preoperative, operative, and postoperative care of all cases in which Dr. Moreno-Cabral is involved, with the exception of Wednesday mornings (protected time for didactic conferences). In addition, the Resident's experience may include a one-week rotation at Kapiolani Medical Center for Women & Children with Dr. Carlos Moreno-Cabral during scheduled Pediatric Cardiovascular Surgery Clinics. During this week, the Resident is excused from Wednesday morning educational sessions to be able to participate fully in the pediatric cardiac surgery experience. The Resident will have a *varied* experience to include ischemic, congenital, valvular, and traumatic or degenerative diseases.

The Resident assigned to Dr. Moreno-Cabral's service, will be responsible for the preoperative evaluation, operative management, and postoperative care of all cardiac surgery cases that Dr. Moreno-Cabral performs, under his direct supervision, or his designee. On days in which Dr. Moreno-Cabral does not have scheduled operations as a primary surgeon or as an assist, the option of scrubbing with a different surgeon will be considered, as long as the case has significant educational value. These surgeons may include Drs. Mark Grattan, Leslie Ito, Shane Yamane, and Dean Nakamura. These additional options will aim to broaden the experience in the surgical treatment of coronary atherosclerosis, general thoracic, congenital disease, acquired valvular disease, and specific diseases related to the great vessels of the chest. The Resident will be responsible for seeing the patient throughout their hospital course and in the clinic on Tuesday and Thursday afternoons with Dr. Moreno-Cabral at his Queen's POB I Office following discharge. The Resident will be responsible for close communication with the Attendings on all issues related to the management of the patients to whom they have been assigned. Specific areas of patient management will be emphasized on this rotation. Cardiovascular instability, postoperative bleeding, arrhythmias, cardiac tamponade, postoperative respiratory and renal problems, and postoperative diabetes and hypertension must be studied and understood. Coronary heart disease, acquired valvular heart disease, aortic aneurysms (thoracic), and congenital heart disease will be emphasized.

Dr. Carlos Moreno-Cabral provides and coordinates the vast majority of pediatric cardiac surgery in Hawaii. The Resident will see selected cases pre- and postoperatively in his outpatient clinic at The Queen's POB I. He is available through the Physician's Exchange at 524-2575.

Required Readings

Residents will be expected to maximize their learning opportunities by reading about anticipated and real conditions encountered during the rotation. Articles will be chosen by the Attending staff from the required text, *Manual of Postoperative Management in Adult Cardiac Surgery* by Moreno-Cabral, Mitchell, and Miller (Williams & Wilkins, Baltimore, 1988).

For more thorough information, residents are encouraged to consult the second edition of *Cardiac Surgery* by Kirklin and Barratt-Boyes (Churchill Livingston, New York, 1993).

Peer-reviewed literature to supplement this may be required.

Evaluation

1. Global evaluation at the end of the rotation, based on ambulatory, in-patient, and operating room contact with Dr. Moreno-Cabral.
2. Focused case review by Dr, Moreno-Cabral.

Other

The Resident will need to contact our Program Office when they are scheduled to do the Pediatric Cardiovascular Surgery Clinic with Dr. Moreno-Cabral at Kapiolani Medical Center. Our Program Office will contact the appropriate Kapiolani Medical Center administrative personnel to issue parking and meal instruction.