

UH & VA CARDIOTHORACIC GOALS & OBJECTIVES

CARDIOTHORACIC SURGERY SERVICE: Benchmark Procedures

Procedures to be assessed formally by supervising resident or faculty member for each resident level:

| Level | Procedure | Evaluator |
|-------|---|-----------|
| PGY-2 | <ol style="list-style-type: none"> 1. Open and Close Sternal Incisions. 2. Videoscopic Lung Biopsy. 3. Videoscopic TALC Pleurodesis. 4. Place Pulmonary Artery Catheter. 5. Electric Cardioversion. | Faculty |
| PGY-3 | <ol style="list-style-type: none"> 1. Open and Close Sternal Incisions. 2. Videoscopic Lung Biopsy. 3. Videoscopic TALC Pleurodesis. 4. Place Pulmonary Artery Catheter. 5. Electric Cardioversion. 6. Sew Proximal Anastomosis in CABG. 7. Perform major portion of Lung Resection. | Faculty |

ADDITIONAL LEVEL-SPECIFIC OBJECTIVES AND EVALUATION TOOLS

In addition to COMMON OBJECTIVES:

| Year | Domain | Objective | Evaluation Tool |
|---------|---|--|---|
| PGY-2/3 | Patient Care | Demonstrate ability accurately to assess consults from the E.D. or other services Demonstrate ability to plan appropriate tests and therapeutic interventions for consults from the E.D. and other services | Chief resident and faculty evaluations |
| PGY-2/3 | Medical Knowledge | Demonstrate an understanding of the pathophysiology of diseases encountered in patients on this service (CAD, valve disease, lung cancer) | Teaching rounds (chief resident and faculty evaluations) |
| PGY-2/3 | Interpersonal and Communication Skills | Respond promptly and courteously to requests by the E.D. and other services Communicate details of consults accurately and promptly to senior residents and staff | 360° evaluations (E.D. staff, Medicine chief residents) Chief resident and faculty evaluations |
| PGY-2/3 | Systems-Based Practice | Demonstrate ability to work with other disciplines in planning efficient, appropriate, cost-effective care | 360° evaluations (E.D., Medicine, ICU nurses) Chief resident and faculty evaluations |
| PGY-2/3 | Practice-Based Learning and Improvement | Recognize deficiencies in own leadership of the service and describe ways to improve to enhance patient care | M&M presentations |
| PGY-2/3 | Practice Based Learning | Choose appropriate care interventions for patients on the service and support the choices by reference to current literature | Teaching rounds (chief resident and faculty evaluations) |
| PGY-2/3 | Professionalism | Take responsibility for smooth functioning of the team | Faculty evaluations |

Cardiac Physiology/Postoperative Management/Inotropic Support

Goals:

1. Understand the basic principles of cardiac physiology such as pre-load, contractibility, and after-load.
2. Describe the rationale for the monitoring equipment, laboratory, and imaging studies used during the initial 24 hrs. following cardiac surgery.
3. Describe and contrast the effects of the various inotropic and pressor agents such as epinephrine, dopamine, dobutamine, milrinone, phenylephrine and vasopressin
4. Be able to recognize atrial fibrillation and atrial flutter on an electrocardiogram. Describe the incidence of, treatment strategies for, and risks associated with atrial dysrhythmias.
5. Learn pharmacology and complications of anti-arrhythmics
6. Describe the acute treatment of the following dysrhythmias:
 - a. Ventricular tachycardia (V-tach).
 - b. Ventricular fibrillation (V-fib).
 - c. Supra-ventricular tachycardia (SVT).
 - d. Pulse less electrical activity (PEA).
 - e. Bradycardia.
7. Recognize and manage postoperative bleeding and cardiac tamponade.
8. Be comfortable with various forms of mechanical ventilation and ventilator weaning strategies.
9. Recognize and treat the various forms of renal dysfunction/failure encountered on the service.
10. Learn how to use a temporary pacemaker.

Ischemic Cardiac Disease

Goals:

1. Understand the risk factors, prevalence, and screening modalities for ischemic cardiac disease.
2. Understand the medical, catheter based, and surgical interventions available for the treatment of ischemic cardiac disease.
3. Describe the coronary circulation.
4. Understand the increased risk of non-cardiac surgery associated with ischemic cardiac disease. Describe options to lessen this risk.
5. Understand the principles of cardiopulmonary bypass and myocardial protection

Lung Cancer/Pulmonary Surgery

Goals:

1. Understand the epidemiology of lung cancer.
2. Understand the workup and staging of patients with lung cancer. Identify which patients with lung cancer benefit from resection.
3. Describe the options, risks, and complication of pulmonary surgery.
4. Describe the rationale for and utility of neo-adjuvant therapy for lung cancer.
5. List the most common causes of and describe the management of malignant pleural effusions.
6. Explain the pathophysiology and expected mortality of chronic obstructive pulmonary disease (COPD) and the medical and surgical treatment options for COPD.
7. Diagnose and describe the various treatment options for the following thorax disease processes:
 - a. Recurrent pneumothorax.
 - b. Lung biopsy.
 - c. Fibro thorax/empyema.
8. Describe the common etiologies of and management of hemoptysis. Define “massive” hemoptysis.
9. List the most common pulmonary bacterial and fungal infections.

Valvular Heart Disease

Goals:

1. Describe the functional anatomy of the cardiac valves.
2. Understand the epidemiology, pathophysiology, and management options for aortic valve disease including both aortic stenosis (AS) and aortic regurgitation (AI).
3. Understand the epidemiology, pathophysiology and management options for mitral valve disease including both mitral stenosis and mitral regurgitation.
4. List the organisms commonly responsible for endocarditis and the current recommendations for prophylaxis.
5. Describe mechanical valve anticoagulation strategies.

Thoracic Trauma

Goals:

1. Be able to recognize and treat a patient presenting with life threatening thoracic trauma such as pneumothorax, hemothorax, flail chest, pulmonary contusion, etc.
2. Understand the role of various imaging modalities (i.e. chest radiograph, computed tomography, angiography) in evaluating a patient with suspected blunt aortic injury.
3. Understand the operative principles involved in surgical repair of the thoracic aorta and the complication associated with this surgery.
4. Articulate the surgical exposure options for access to the great vessels.

Mediastinum/Chest Wall

Goals:

1. Understand the basic anatomy of the mediastinum.
2. List the malignancies frequently encountered in the mediastinum, what tumor markers are associated with these malignancies, and describe their diagnosis and management.
3. List the primary chest wall neoplasms and describe their management.
4. Describe the surgical options for the treatment of myasthenia gravis.

Esophageal Cancer/Esophageal surgery

Goals:

1. Understand the epidemiology and natural history of esophageal carcinoma.
2. Understand the diagnosis, workup, and staging of patients with esophageal carcinoma.
3. Identify which patients with esophageal carcinoma benefit from resection. Describe the difference between improved survival and palliation in regards to esophageal carcinoma.
4. Articulate the neo-adjuvant and adjuvant treatment options available for patients with esophageal carcinoma.
5. Describe the options, risks, and complications of esophageal surgery.
6. Understand basic principles of treatment of esophageal perforation

Congenital Heart Disease

Goals:

1. Describe the incidence of congenital heart disease in the United States.
2. Understand the fundamental differences between fetal and adult circulation and the implications for children with congenital heart disease.
3. Understand the anatomy, pathophysiology, physical signs, diagnostic workup, treatment, and natural course for these diseases:
 - a. PDA
 - b. ASD
 - c. VSD
 - d. TOF
4. Describe common associations between congenital heart disease and other birth defects/syndromes.

Thoracic Aorta

Goals:

1. Understand the anatomy, classification, and workup of patients with thoracic aortic *dissection*. Discuss the treatment options for Type A (ascending) and Type B (descending) dissections.
2. Understand the anatomy, classification, and workup of patients with thoracic aortic *aneurysm*. Discuss the treatment options for ascending and descending thoracic aortic aneurysms.
3. Describe the connective tissue abnormalities, physical manifestations, and treatment of patients with Marfan's and other connective tissue disorders.

Transplantation/Assist Devices

Goals:

1. Understand the pathophysiology of end stage heart disease and the factors involved in selecting patients for transplantation.
2. Understand the basic principles of transplant immunosuppression and the mechanism of action of steroids, cyclosporine, azathioprine, mycophenolate, and OKT3.
3. Describe the acute and chronic complication of cardiac transplantation.
4. Understand the indications for and types of ventricular assist devices.
5. Understand the indications for and describe the physiologic principles of intra aortic balloon pumps (IABP).