



Learning Objectives for Undergraduate Rotations in Cardiac Surgery Year 3 Clerkship

Main source: Surgical Specialties

A Anatomy

- Describe the course of blood through the heart including both the pulmonary and systemic circulation.
- Describe the basic morphology and function of the cardiac valves and epicardial coronary arteries.

B Hemodynamics, Physiology, and Monitoring

- Describe the various hemodynamic parameters measured with a Swan-Ganz (pulmonary artery) catheter and understand how they relate to cardiac disease.
- Understand the basics of cardiac physiology including *preload and afterload*.
- Understand the basic factors affecting blood pressure ($BP = CO \times SVR$).

C Assessment of Cardiac Function

- Understand the utility of various tools that can be used to assess the heart (EKG, ECHO, angiogram, CT, MRI, nuclear medicine scans).

D Ischemic Heart Disease

- Understand the risk factors and presentations for coronary artery disease (CAD), syndromes and their appropriate investigation?
- Understand the pathophysiology of atherosclerotic CAD and blood flow through the epicardial coronary vessels.
- Understand the use of cardiopulmonary bypass, the technique of coronary artery bypass, and the advantages and disadvantages of different types of conduit.
- List the potential complications of open heart surgery.

E Aortic Valve Disease

- Describe the presenting symptoms and signs of aortic valve disease.
- Describe the common causes or pathophysiology of aortic stenosis.
- Describe the surgical and medical management of them.

F Mitral Valve Disease

- Describe the symptoms and signs of mitral valve disease and the commonest causes.
- Describe management options.

G Device therapy (pacemaker (PM) and AICD implant)

- Understand the technique for transvenous implant of pacemakers and AICD (defibrillators).

H Aortic Disease

- Understand the anatomy presentations and management of traumatic aortic tear, aortic dissection, intramural hematoma and aortic aneurysm.

G Surgical Skills

- Learn the technique involved in closing subcutaneous tissue and skin wounds and apply it.
- Proper technique of chest tube insertion.