Non-cardiac Thoracic Surgery Curriculum
Competency Based Goals and Objectives

General
The educational goal of the Department of Cardiovascular Sciences is to prepare general surgeons-in-training for the independent practice of non-cardiac thoracic surgery as part of their general surgery training. Independent practice implies the capability to take responsibility for all aspects of the care of the patient before and after operation, in the hospital and in ambulatory care settings.

The specific educational goals encompass all areas of care of the thoracic patient. These goals, listed below, are structured to conform to the six general competency requirements set forth by the Accreditation Council for Graduate Medical Education (ACGME) as well as The American Board of Surgery (ABS). They are to impart to the surgeon in training:

A. Ability to provide patient care that is compassionate, appropriate and effective for the management of thoracic surgical disease.
B. Appropriate medical knowledge of the relevant anatomy and physiology of pulmonary and digestive systems, including interpretation of current literature and facility in assessment of thoracic diseases through clinical examination, laboratory testing, and imaging techniques.
C. Practice-based learning and improvement that involves self-assessment of patient care, judgment regarding the relative roles of all available treatments, both medical and surgical, critical appraisal of the scientific literature and dedication to life-long learning.
D. Interpersonal and communication skills resulting in cordial yet effective communication with patients and their families as well as other health care professionals.
E. Professionalism, as manifested through honesty, dependability, unwavering commitment to the performance of assigned responsibilities, maintenance of high standards of ethical behavior, provision of continuity of patient care at all times, and sensitivity to issues of age, gender, race and culture.
F. The ability to implement a systems-based practice as demonstrated as awareness of and adaptability to the larger context and system of health care, and use of advancements in information technology and patient resources to optimize care.
Goals and Objectives of Specific Rotations:

**R2 Rotation**

**PATIENT CARE, MEDICAL KNOWLEDGE & TECHNICAL SKILLS:**

1. Understand the basic anatomy and physiology of the cutaneous, muscular, and bony components of the chest wall and their relationships to adjacent structures
2. Gain experience with different approaches to the chest wall
3. Develop an understanding of arterial, venous, and bronchial anatomy of lungs and their interrelationships
4. Develop an understanding of lymphatic anatomy of lungs, major lymphatic nodal stations, and lymphatic drainage routes of lung segments
5. Know common pathogens that produce lung infections; describe basic medical treatment options
6. Understand pathologic results and alterations of pulmonary function tests and their utility in assessing for operative candidacy
7. Know indications for plain radiography, CT scan, magnetic resonance imaging, and PET scanning for staging of lung cancer
8. Understand staging of lung cancer
9. Understand indications for resection of primary lung cancer
10. Understand indications for resection of pulmonary metastases
11. Understand indications for and principles of anti-reflux operations and management of paraesophageal hernias
12. Know clinical presentation, diagnosis and management of esophageal perforation
13. Understand types of malignant esophageal neoplasms, their presentation and diagnosis, and basic treatment plans
14. Review principles of nutritional management of thoracic patients
15. Describe specific indications for surgical management of trauma to the thorax and its contents
16. Evaluate infiltrates, infectious processes, and neoplastic processes in the thorax, and recommend appropriate management
17. Summarize the causes and appropriate management of cardiac arrhythmias, including: pharmacotherapeutics, pacemakers, cardioversion, defibrillators
18. Describe the diagnosis of such surgical complications as: fistulas, esophageal leak/stenosis/obstruction, loculated hemothorax, postoperative bleeding, empyema, air leaks, bronchial obstructions, endstage COPD/pulmonary fibrosis
19. Identify indications for and be prepared to interpret results of plain and positional chest x-rays, gastrointestinal contrast studies, CT, MRI, and PET scans
INTERPERSONAL & COMMUNICATION SKILLS:
1. Establish rapport with patients and their families.
2. Perform a patient-centered medical interview.
3. Effectively and considerately communicate with team staff in a manner that promotes care coordination.

PROFESSIONALISM:
1. Demonstrate respect and compassion for all patients.
2. Exhibit competency in working with patients regarding advanced directives, DNR status, futility, and withholding/withdrawing therapy.
3. Understand and compassionately respond to issues of culture, age, sex, sexual orientation, and disability for all patients and their families.
4. Identify patient’s fear associated with the diagnosis of cancer.
5. Identify and assist with the psychological stress of patients with chronic disease as it affects their personal life, their family life, and their socioeconomic environment.

PRACTICE-BASED LEARNING:
2. Use information technology to do focused clinical research on thoracic surgery issues.

SYSTEMS BASED PRACTICE:
1. Demonstrate understanding of medical delivery systems as they relate to both inpatient and outpatient resources.
2. Perform efficient, timely, and cost effective practice patterns.
3. Work well with multidisciplinary teams, coordinating care and effectively working with other surgeons and other providers in a team setting.

R3/4 Rotation

PATIENT CARE, MEDICAL KNOWLEDGE & TECHNICAL SKILLS:
1. Understand the anatomy and physiology of the cutaneous, muscular, and bony components of the chest wall and their relationships to adjacent structures.
2. Know all operative approaches to the chest wall; recognize normal and abnormal anatomy of the chest wall.
3. Understand arterial, venous, and bronchial anatomy of lungs and their interrelationships.
4. Understand lymphatic anatomy of lungs, major lymphatic nodal stations, and lymphatic drainage routes of lung segments.
5. Know common pathogens that produce lung infections; describe their presentation and pathologic processes; describe treatment and indications for operative intervention
6. Understand natural history, presentation, and treatment of chronic obstructive lung disease
7. Understand pathologic results and alterations of pulmonary function tests and their utility in assessing for operative candidacy
8. Know indications for plain radiography, CT scan, magnetic resonance imaging, and PET scanning for staging of lung cancer
9. Understand staging of lung cancer and recommended treatments based on stage
10. Understand indications for resection of primary lung cancer, and methods of resection
11. Know indications, interpretation, and use of nuclear medicine, ventilation/perfusion scanning, and cardiopulmonary exercise testing to determine operability of candidates for pulmonary resection
12. Understand methods of invasive staging such as mediastinoscopy, Chamberlain procedure, scalene node biopsy, thoracoscopy
13. Understand indications for resection of pulmonary metastases
14. Understand indications for and principles of anti-reflux operations and management of paraesophageal hernias
15. Understand the basic indications for and interpretation of standard upper GI clinical testing, i.e. barium esophagram, pH testing, manometry
16. Know clinical presentation, causes, diagnosis, and treatment of motility disorders of esophagus
17. Know clinical presentation, diagnosis and management of esophageal perforation
18. Discuss types of benign esophageal neoplasms, their clinical presentation, diagnosis, and treatment
19. Understand types of malignant esophageal neoplasms, their presentation, diagnosis, histologic appearance, and treatment
20. Review principles of nutritional management of patients with thoracic disease, especially esophageal neoplasms
21. Know indications for different thoracic incisions including anatomy and physiological impact
22. Discuss the general diagnostic and operative approaches to treating blunt and penetrating trauma to the thorax and its contents
23. Describe specific surgical management of trauma to the thorax and its contents
24. Integrate the pathophysiology and surgical management for: aortic aneurysms, aortic dissections, trauma to heart and great vessels, occlusive disease
25. Evaluate infiltrates, infectious processes, and neoplastic processes in the thorax, and recommend appropriate management
26. Discuss and list thoracic tumor types, staging for each, including descriptions of nodal drainage sites and levels
27. Recognize pectus excavatum and pectus carinatum, understanding possible physiologic disturbances; identify diagnostic tests to identify these physiologic disturbances
28. Understand the etiology, evaluation, differential diagnosis, and diagnostic criteria for thoracic outlet syndrome; recognize varied presentations of the syndrome; be prepared to interpret appropriate diagnostic tests
29. Summarize the causes and appropriate management of cardiac arrhythmias, including: pharmacotherapeutics, pacemakers, cardioversion, defibrillators
30. Describe the diagnosis and discuss therapy of such surgical complications as: fistulas, esophageal leak/stenosis/obstruction, loculated hemotherax, postoperative bleeding, empyema, air leaks, bronchial obstructions, endstage COPD/pulmonary fibrosis
31. Identify indications for and be prepared to interpret results of plain and positional chest x-rays, gastrointestinal contrast studies, CT, MRI, and PET scans
32. Discuss quality assurance, cost-cutting measures, and patient-care pathways as they relate to thoracic surgery

INTERPERSONAL & COMMUNICATION SKILLS:
1. Establish rapport with patients and their families.
2. Perform a patient-centered medical interview.
3. Engage patients in shared decision-making, and participate in family discussions.
4. Effectively and considerately communicate with team staff in a manner that promotes care coordination
5. Discuss patient’s fears regarding outcome of surgery.

PROFESSIONALISM:
1. Demonstrate respect and compassion for all patients.
2. Exhibit competency in working with patients regarding advanced directives, DNR status, futility, and withholding/withdrawing therapy.
3. Understand and compassionately respond to issues of culture, age, sex, sexual orientation, and disability for all patients and their families.
4. Identify patient’s fear associated with the diagnosis of cancer
5. Identify and assist with the psychological stress of patients with chronic disease as it affects their personal life, their family life, and their socioeconomic environment.

PRACTICE-BASED LEARNING:
1. Understand TNM staging of lung carcinoma and its application to diagnosis, therapeutic planning, and management of patients with lung carcinoma; Know signs of inoperability
2. Understand complications of pulmonary resection and their management
3. Demonstrate ability to practice lifelong learning by reading and discussing current issues of Annals of Thoracic Surgery and Journal of Thoracic and Cardiovascular Surgery
4. Use information technology to do focused clinical research on thoracic surgery issues.

SYSTEMS BASED PRACTICE:
1. Demonstrate understanding of medical delivery systems as they relate to both inpatient and outpatient resources.
2. Work well with multidisciplinary teams, coordinating care and effectively working with other surgeons and other providers in a team setting.
3. Learn the basics of office practice and outpatient surgery.