

PGY 3**Introductory General Thoracic Surgery****Description:**

The joint Thoracic Surgery Service at the Loma Linda University Medical Center (LLUMC) and the VA Loma Linda Healthcare System (VA) will provide residents with the full spectrum of benign and malignant lung, mediastinal, and gastrointestinal surgeries. Due to the close geographic proximity of the two institutions Two ABTS board certified surgeons will serve as the faculty for this rotation. The weekly schedule will be as follows:

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		VA Teaching Rounds		LLUMC 7Grand Rounds		LLUMC Teaching Rounds	
AM	Day Off Unless Scheduled for Weekend Home Call	VA OR/Clinic with Zaheer IHI clinic with Dr LE	LLUMC IHI Clinic with Zaheer	LLUMC OR with Zaheer/LE LLUMC	LLUMC OR with Zaheer/LE	LLUMC Cancer Center Multidisciplinary Thoracic Oncology Clinic	Day Off Unless Scheduled for Weekend Home Call
PM			VA Thoracic Clinic with Zaheer	LLUMC OR with Zaheer		OR with Zaheer/LE	
			VA Lung Nodule Board	VA Tumor Board			

This rotation will serve as an introduction to general thoracic surgery including preoperative evaluation, intraoperative intervention, and postoperative care. The resident complement for this rotation will be comprised of one PGY 6 Thoracic Surgery Resident and one PGY 3 or 4 General Surgery Resident. Residents will have unrestricted exposure to a wide range of core surgical conditions and procedures and will be taught the fundamental skills required to organize a specialty clinical service.

Patient Care:

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. At the end of this rotation, the resident should demonstrate an understanding of the principles of the care and management of patients on the thoracic surgery service and demonstrate competency by:

- Performance of appropriate patient history and physical on admission to the hospital or in the outpatient clinic.
- Performance of a comprehensive thoracic consultation with a detailed plan of management for in-house patients.
- Proficiency in the diagnosis, pre-operative evaluation, Intraoperative management, and postoperative management of patients with benign esophageal disorders including:
 - a. Barrett's Esophagus

- b. Benign Neoplasms
- c. Esophageal Diverticular Disease
- d. Esophageal Cysts
- e. Gastro-esophageal reflux disease
- f. Motility Disorders
- Proficiency in the diagnosis and pre-therapeutic evaluation of patients with esophageal cancer, including indications for induction therapy, curative and palliative options, including both operative and endoscopic approaches.
- Ordering appropriate diagnostic, laboratory, and radiological studies.
- Postoperative management of patients following thoracic surgery.
- Participation as a first assistant or a primary surgeon in all thoracic surgery cases in the operating room:
 - a. Esophageal Surgeries
 - (1) Esophagectomy
 - (2) Antireflux Surgery/Fundoplication
 - (3) Hiatal Hernia Repair
 - (4) Reoperative antireflux surgery
 - b. Lung Resections
 - (1) Pneumonectomy
 - (2) Lobectomy
 - (3) Segmentectomy
 - (4) Wedge resection
 - c. Lung Decortications
 - d. Pleurodesis
 - e. Upper gastro-intestinal endoscopy and bronchoscopy
 - f. Video Assisted Thoracoscopic Surgeries (VATS) and Robotic Assisted Thoracic Surgery (RATS)
- Insertion of central (internal jugular, subclavian, and femoral) venous lines.
- Insertion of arterial lines (radial and femoral).
- Insertion of chest tubes and performance of thoracintesis.
- Management of cardiac dysrhythmias and low cardiac output state.
- Attendance at multi-disciplinary conferences relating to patient care.
- Prevention of iatrogenic complications in the ICU patient (aspiration pneumonia, line sepsis, bladder infections, stress ulcers, etc.).
- Proficiency in selection of diagnostic procedures such as the various approaches to lung biopsy and mediastinal lymph node evaluation.
- Proficient performance of the basic components of major pulmonary resections including, pneumonectomy, lobectomy, and sub-lobar resection.
- Appropriate management of neoplasms involving the chest, including the indications and options for chest wall reconstruction.

Teaching Methods:

1. Assigned reading
2. Attendance at multi-disciplinary conferences relating to patient care
3. Attendance at regional/national/international conferences/meetings
4. Cardiovascular Quality Improvement Conference (CVQI) (bi-monthly)
5. Clinical research projects

6. Daily patient rounds with discussion
7. Intraoperative experience
8. Monthly Mortality and Morbidity (M&M) Conference
9. Outpatient clinic experience
10. SESATS
11. Simulation/role playing:
12. TSDA Boot Camp
13. Weekly didactic lecture: Monday morning Core Curriculum Lecture (follows TSDA Weekly Curricula)
14. Weekly Grand Rounds Conference
15. Weekly Tumor Board Conference

Methods of Assessment:

1. Case presentations by residents (evaluated by attending)
2. Comprehensive Evaluation: this is a multi-source evaluation that is completed by patients and staff to assess a residents professionalism and interpersonal and communication skills
3. Direct observation by attending: in the operating room, on the patient care unit(s), and during outpatient clinic (patient examination)
4. Journal Club (performance assessed by attending)
5. Mock oral examinations (evaluated by examining panel)
6. Patient presentation during daily rounds (evaluated by attending(s) rounding with resident)
7. Resident experience narrative (evaluated by Program Director)
8. Resident performance on anatomic or animal model
9. Review of case log by Program Director
10. Review on patient outcomes during monthly M&M Conference (assessment by attendings)
11. Semi-annual written evaluation of resident by attending
12. Written evaluation of resident by attendings on rotation

Medical Knowledge:

Resident must demonstrate knowledge of established and evolving biomedical, clinical, and epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. At the end of this rotation, the resident should demonstrate an understanding of the medical knowledge necessary to care for and manage patients on the thoracic surgery service and demonstrate competency by:

- Exhibit knowledge of the anatomy, embryology and physiology of the chest wall, tracheobronchial tree, lungs, esophagus, pleura, mediastinum (including compartments and the disease/tumors of each compartment), and pericardium.
- Demonstrate an understanding of the basic principles of diagnosis and preoperative evaluation (including indications for and timing of surgical intervention), surgical management, and postoperative management of thoracic surgical patients, including patients with :
 - a. A wide variety of pulmonary infections
 - b. All disorders of the Gastro-esophageal Junction
 - c. Benign and malignant neoplasms of the lung
 - d. Esophageal Diverticular Disease
 - e. Esophageal Disease

- f. Interstitial Lung Disease
- g. Respiratory Failure
- Demonstrate an introductory understanding of the endoscopic and operative management of tracheobronchial obstruction.
- Indications for different thoracic incisions, including knowledge of surgical anatomy and physiologic impact.
 - a. Anterior Thoracotomy
 - b. Anterolateral Thoracotomy
 - c. Posterolateral Thoracotomy
 - d. Clamshell/Bilateral Anterolateral Thoracotomy with Transverse Sternotomy
 - e. Median Sternotomy
 - f. Mini-thoracotomy/Muscle-sparing Thoracotomy
- Management of ventilators and weaning criteria.
- Indications for invasive monitoring (central venous lines, pulmonary artery catheters, arterial lines).
- Indications for and complications of endoscopies (bronchoscopy, esophagoscopy, etc.).
- Indications for insertion and removal of chest tubes.
- The pharmacology, indications, complications, and interactions of drugs commonly used in the cardiothoracic surgery ICU (e.g. inotropic drugs, antibiotics, vasodilators, anti-arrhythmics, anticoagulants, bronchodilators, diuretics, and pain medications).
- Recognition of sepsis and its management in ICU patients.
- Demonstrate knowledge through appropriate application and interpretation of the following tools for assessing pulmonary disease:
 - a. Arterial Blood Gas
 - b. Chest X-ray (CXR)
 - c. CT Scan
 - d. Endobronchial Ultrasound (EBUS)
 - e. Endoscopic Ultrasound (EUS)
 - f. Esophageal Manometry and pH Testing
 - g. Magnetic Resonance Imaging (MRI)
 - h. Nuclear Scans
 - i. Positron Emission Tomography (PET) Scan
 - j. Pulmonary Function Test (PFT)
 - k. Ultrasonography
 - l. Ventilation/Perfusion (V/Q) Scans
- Exhibit knowledge of lung resection complications and management.
- Demonstrate knowledge of the staging process for esophageal cancer and the treatment options
- Exhibit knowledge of indications, contraindications, and complications of video-assisted thoracic surgery (VATS) and Robotic Assisted Thoracic Surgery (RATS).
- Demonstrate ability to recognize and treat potential urgent pulmonary situations:
 - a. Arrhythmia
 - b. Pleural Effusion
 - c. Pneumonia
 - d. Pneumothorax
 - e. Pulmonary Emboli (PE)
 - f. Trauma of Lung
 - g. Trauma of Tracheobronchial Tree

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Practice-Based Learning & Improvement:

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. Residents are expected to develop the skills and habits necessary to meet the following goals:

- Actively participate in monthly journal club: review and discuss currently published articles from a relevant journal.
- Develop a personal systematic and effective self-directed learning strategy (to include the thoracic surgery section in the two-volume set of Sabiston and Spencer's *Surgery of the Chest*, current peer-reviewed professional journals, topics on CTSNet, etc.) and set learning and improvement goals.

- Identify strengths, deficiencies, and limits in personal knowledge and expertise.
- Incorporate formative evaluation feedback into daily practice.
- Participate in the weekly didactic core curriculum teaching sessions.
- Prepare and present a review of a thoracic surgery topic quarterly.
- Participate in the teaching and supervision of general surgery resident, medical student, and other subordinate surgical house staff.
- Participate effectively in the teaching of patients and their families regarding the patient's disease processes.
- Participate in the weekly Thoracic Tumor Board conference.
- Participate in a systematic study program to prepare for the General Surgery Board exam (optional).
- Systematically analyze practice using quality improvement methods and implement changes with the goal of practice improvement.

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Interpersonal & Communication Skills:

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Residents are expected to:

- Communicate clearly and effectively with patients, families, and other healthcare professionals.
- Obtain and synthesize relevant history from patients and family.
- Exhibit the ability to communicate clearly and appropriately the patients' progress and setbacks to the attending surgeon, nursing staff, and the patient's family.
- Prepare and present unit rounds in an organized and systematic manner.
- Dictate consultations and discharge summaries in a manner that reflects good organization and comprehensive knowledge of the patient.
- Present thoracic cases in the monthly morbidity and mortality conference.
- Present and discussion with patients and families of treatment options, alternatives, and complications as part of informed consent.
- Communicate effectively with outside facilities and referring physicians wishing to transfer patients.

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Professionalism:

Residents must demonstrate a commitment to carrying out professional responsibilities and adherence to ethical principles. Residents are expected to:

- Demonstrate the ability to communicate courteously and effectively with patients, families, and other members of the healthcare team.
- Show respect and appreciation for cultural, religious, and racial diversity among the staff and patients.
- Maintain high moral and ethical standards, show compassion, and integrity in the care of patients.
- Exhibit positive and kind personal and interpersonal professional behavior.
- Recognize the need for assistance from more experienced colleagues.
- Respect patient privacy and autonomy.

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Systems-Based Practice:

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

- Establish a cordial and efficient working relationship with all services involved in the care of the thoracic patient.
- Utilize resources wisely and effectively.
- Encourage awareness of patient safety and optimal patient care systems.
- Demonstrate cost effectiveness in the management of patients.
- Partner with healthcare managers and other paraprofessionals to improve healthcare and quality.
- Participate in quality improvement conferences to resolve system errors and suggest methods for improvement.
- Follow established unit pathways and protocols for the care of thoracic surgery patients.
- Complete all medical records (operative notes, discharge summaries, database cards, etc.) and other patient care related documentation in a timely and accurate manner.

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