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I. INTRODUCTION

The Division of Cardiothoracic Surgery has been an integral part of the Department of Surgery at MUSC since the late 1960's. The first Director of the Division was Dr. William Lee. Following Dr. Lee’s untimely death in 1978, Dr. Edward Parker, the Dean of Thoracic Surgery in South Carolina, served as Interim Director until 1979 when Fred A. Crawford, Jr., M.D., assumed leadership of the Division. John S. Ikonomidis, M.D., Ph.D., succeeded Dr. Crawford as Division Chief and Residency Program Director on July 1, 2009.

The Cardiothoracic Surgical Residency Program has been approved by the Thoracic Surgery Residency Review Committee since the early 70's. Initially the program was a two-year program, but in 1987, again with the approval of the Thoracic Surgery Residency Review Committee, the program was changed to a three-year program. The last site visit by the Thoracic Surgery Residency Review Committee was in 2007 and at that time, the program was given a full five-year accreditation with commendation.

University Mission Statement

The Medical University of South Carolina (MUSC) is a public institution of higher learning the purpose of which is to preserve and optimize human life in South Carolina and beyond. The university provides an interprofessional environment for learning and discovery through education of health care professionals and biomedical scientists, research in the health sciences, and provision of comprehensive health care. The university is committed to fulfillment of its responsibilities:

- Educate students to become caring, compassionate, ethical, and proficient health care professionals and creative biomedical scientists.
- Promote teamwork competencies to be applied in a collaborative, interprofessional health care delivery and research setting.
- Recruit and develop dedicated, scholarly educators who inspire their students to lifelong learning in the service of human health.
• Offer educational opportunities to graduates, faculty and staff; to other biomedical scientists and practicing health professionals; and to the public.
• Seek and welcome students, scholars, and staff regardless of gender, race, age, nationality, religion, or disability, while emphasizing the benefits of diversity.
• Conduct research in the health sciences, advancing knowledge and encouraging new responses to health care needs including interprofessional delivery of health care.
• Provide excellence in patient care in an environment that is respectful of others, adaptive to change, accountable for outcomes, delivered by coordinated interprofessional teams, and attentive to the needs of underserved populations.
• Advance economic development by introducing new technology and fostering research links with industry and other academic institutions.
• Optimize the use of all resources, including financial support from the state and revenues generated from research, clinical operations, and philanthropy.
• Provide leadership to the state in efforts to promote health and prevent disease.
• Serve as a state resource in health policy, education, and related matters for other institutions and the general public.

As South Carolina’s only comprehensive academic health center providing a full range of programs in the biomedical sciences, the Medical University of South Carolina is engaged in activities statewide. Its campus is located on more than 50 acres in the city of Charleston. More than 2,400 students in six colleges (Dental Medicine, Graduate Studies, Health Professions, Medicine, Nursing, and Pharmacy) study for degrees at the baccalaureate, masters, doctoral, and other professional levels. The University also provides residency training for over 500 graduate health professionals. The teaching staff is comprised of approximately 1,200 full-time and 150 part-time faculty.

Approved: MUSC Board of Trustees
January 8, 2008

Approved: SC Commission on Higher Education
College of Medicine Mission Statement

The College of Medicine, as an integral part of the Medical University of South Carolina, is dedicated to the University’s education, research and service missions. In doing so, the College is committed to maintaining an educational environment for all students that prepares them for a career of excellence in the practice of medicine and in the service to their communities. We recognize the need to engender and support life-long learning to sustain and expand competence and performance throughout the physician’s career and we acknowledge the importance of interdisciplinary and interprofessional education in the provision of accessible, high-quality health services.

To support these educational goals, the College is committed to the continued development and expansion of biomedical research to extend the boundaries of health care for all people. Further, we support enhancement of research directed to improving access, enhancing quality and controlling costs of health care. These commitments are manifest through active participation in a medical center with broad capabilities and responsibility for the provision of primary, as well as tertiary/quaternary health services for citizens in the state. We continue to nurture strong programs in primary health care to support current and future educational, research and service requirements.

We believe that these objectives are best obtained through ensuring optimal opportunities for all constituents—students, faculty and administration, including all backgrounds and levels of diversity, to achieve full potential. Additionally, the College is committed to the development and prudent use of resources to achieve its mission.

Medical Center Mission Statement (for Medical University of South Carolina)

The mission of the Medical Center of the Medical University of South Carolina is to provide excellence in patient care, teaching and research in an environment that is respectful of others, adaptive to change and accountable for outcomes.

As part of our teaching mission, residents and students may participate in your care along with your attending physician, registered nurses and other caregivers. Please speak with your nurse or doctor if you have any concerns.
Department of Surgery Mission:

To provide patient care recognized for excellence integrated with innovative research which leads to the advancement of medical science and state of the art training for our surgeons and future physicians.

Division of Cardiothoracic Surgery Mission Statement

The Division of Cardiothoracic Surgery serves the State of South Carolina by:

1. Providing education regarding thoracic and cardiovascular surgery to students, residents, and practicing physicians throughout the state;

2. advancing knowledge regarding thoracic and cardiovascular disease through clinical and basic research;

3. providing care to patients with all forms of thoracic and cardiovascular disease while serving as the tertiary referral center for the state.
II. RESIDENT RESPONSIBILITIES

The Cardiothoracic Surgery Residency is designed to allow progressive resident responsibility at all levels commensurate with knowledge and technical ability. Emphasis is placed on academic knowledge and accomplishment as well as clinical expertise in patient care. Graded responsibility under appropriate attending supervision is delegated to residents based on demonstrated merit in order to provide quality patient care.

A. Department of Surgery Policy on Resident Supervision and Chain of Command

The attending surgeon is responsible for the overall care of the patient and the supervision of all residents involved in the care of the patient. The chain of command extends from the PG-1 general surgery and CT surgery integrated program residents, to the mid-level general surgery and CT surgery integrated program residents, to the first or second-year independent program thoracic surgery residents and fourth and fifth-year CT surgery integrated program residents, and then through the third year (independent program) and sixth year (integrated program) or Chief Resident in Thoracic Surgery to the Attending Surgeon. Delegation of resident responsibilities in the pre and postoperative management of patients and specifically, in the operating room, is made by the Attending Surgeon based upon direct observation and knowledge of the resident’s skill, abilities, and assessment of the technical requirements of the operative procedure.

B. Division of Cardiothoracic Surgery Educational Goals and Strategies

General Goals and Objectives

The educational goal of the Division is to prepare surgeons-in-training for the independent practice of thoracic surgery. 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. Thoracic surgeons tend to focus their practices on one or more of the subdivisions of the specialty. A corollary goal, therefore, is to prepare our residents broadly in all areas of the specialty, so that by the end of their training they will be prepared to practice in any of those areas; that is, they will be totipotential in cardiothoracic surgery.

The specific educational goals encompass all areas of care of the cardiothoracic patient. These goals, listed below, are structured to conform with the six general competency requirements set forth by the Accreditation Council for Graduate Medical Education (ACGME) as well as Thoracic Surgery Directors Association (TSDA) and The American Board of Thoracic Surgery (ABTS). 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 cardiothoracic surgical disease.

B. appropriate medical knowledge of the relevant anatomy and physiology of cardiac, 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.

Strategies

Several strategies are used to achieve those goals.

A. Patient Care

Progressively increasing (graded) responsibility for patient care is assigned throughout the residency. In the operating room, each resident starts as an assistant and over time, takes on increasing responsibility for the technical aspects of operating, depending upon previous experience, current operative skill, and the particular demands of a specific operation. On the wards, units, and clinics, the level of supervision of the residents’ activities is very close at first, and as experience and clinical judgment mature, the resident is given progressively more responsibility for decision making.

Daily and frequent contact with attending faculty in all areas of clinical practice (operating room, wards, intensive care units, thoracic surgical clinics, and conferences), allows not only for transmission of factual information regarding the care of patients, but also absorbing the normative aspects of clinical practice through role modeling by attendings.
B. Medical Knowledge

The Comprehensive Pre-Requisite Thoracic Surgery Curriculum published by the TSDA has been fully implemented in the Division. The curriculum is covered in one-hour sessions each Tuesday morning, and attendance is mandatory for CT residents and attending faculty. These sessions are intended to be a question and answer session where assigned attending surgeons should be conducting a half-hour discussion with the residents by asking questions and soliciting answers in order to satisfy themselves that the residents have adequately reviewed and understand the material for that session. It is the responsibility of the assigned resident to review the assigned material to make sure that it is up to date. Secondly, it is the responsibility of the assigned resident to meet with the two faculty members who are assigned for that week and confirm that the material is adequate for discussion and if further articles are required, to obtain those and distribute them to the residents and staff. Furthermore, it is the assigned resident’s responsibility to locate any assigned chapters or other articles that are not immediately accessible and distribute these to the group.

Several routine weekly one-hour conferences include an adult medical-surgical cardiac catheterization conference, two pediatric medical-surgical cardiac catheterization conferences, thoracic tumor board, a divisional mortality and morbidity conference at which all deaths, complications, and unusually interesting cases of the preceding week are discussed. In addition, surgical grand rounds are attended by the residents when a topic is presented pertinent to CT surgery.

Each resident attends at least one cardiothoracic national meeting each year, at Divisional expense. They also attend any other meetings at which they have had an abstract accepted for presentation.

In the second year of the independent program and fourth year of the integrated program, each resident participates in an elective rotation which provides detailed exposure to important diagnostic and imaging modalities in cardiothoracic surgery.

C. Practice-based learning and improvement

A journal club is held in the evening once a month, consisting of two hours of discussion of pertinent articles from recent issues of cardiothoracic journals. Both residents and faculty present for discussion the most important articles in that issue. Discussion regarding relevance, statistical merit, and comparison to previous literature occurs. Attendance includes thoracic surgery residents and attending faculty as well as invited cardiothoracic surgeons throughout the entire state.

Progress of learning is measured through the in-training examinations provided yearly by the Thoracic Surgery Directors Association and with in-training oral examinations conducted each of the final three years of training by every CT faculty member.

Residents are required to complete one research project and to write one or more scientific papers for publication in the cardiothoracic literature in collaboration with faculty members every three years. This not only teaches analytic and interpretive skills
in reading the surgical literature, but it also provides insight into the process of producing scientific literature from beginning to end.

Residents are provided with critical appraisal of their own patient care abilities through case discussions at mortality/morbidity conferences, through review of case lists with the program director, and through 360° evaluations.

D. Interpersonal and communication skills

Residents are assigned graded responsibility for management of the health care team throughout the training period during which time the ability to effectively direct the management of patients through this team is honed.

Residents receive feedback on their progress from attendings, resident peers and other staff through comprehensive evaluations every six months.

Residents learn from faculty interactions with patients and families on ward rounds and in clinics.

E. Professionalism

Residents learn appropriate behavior through interaction with and observing the behavior of senior residents and attendings as role models.

The residents’ Comprehensive Thoracic Curriculum seminar series includes several professionalism-based sessions on various topics in ethics, law, economics, and social issues. Cardiothoracic residents also attend Surgical Grand Rounds, particularly those that include similar topics in the general area of professionalism.

Risk Management (and Medical Legal issues), Sexual Harassment, Professionalism, Medicare Compliance and Sleep Deprivation are covered at MUSC Resident Orientation.

F. Systems-based Practice

Residents learn and are required to use current medical information and clinical management programs implemented by MUSC and assess these systems in a critical manner.

Through attendance at CT faculty division meetings, residents are exposed to the management and personnel issues related to the practice of CT surgery both within the institution and relating to the regional and national patient care climate.

In the outpatient setting, the resident is exposed to fee schedules, proper coding, insurance issues, and credentialing issues.
Resident Assignments (Rotations)

The Cardiothoracic Surgical Residency Program is one in which there is a progressive chain of graded responsibility beginning with the first year of training and progresses through the chief resident to the attending surgeon and ultimately to the chief of the division.

Residents at each level are expected to participate in the teaching of junior residents, students, nurses and ancillary personnel at a level that is appropriate to their own knowledge and abilities. Interaction with peers and ancillary personnel will be maintained at a professional level. Appearance, attire, and behavior with patients, peers, and other personnel must be of the highest professional standards. Communication among members of the cardiothoracic surgical team is critical at all levels. The clinical status of each patient needs to be accurately communicated to superiors at an appropriate level of decision making, especially when significant changes occur. The cardiothoracic surgical resident at all levels has a major role and responsibility in the education of the junior members of the team including other residents, medical students, and ancillary personnel.

Residents are assigned specific rotations throughout their residency. Each rotation focuses on education in specific areas listed in the accompanying table.
Assignments to Clinical Services – 2010-2011

MEDICAL UNIVERSITY OF SOUTH CAROLINA
CARDIOTHORACIC SURGERY

<table>
<thead>
<tr>
<th>Week</th>
<th>PG1 DeNino</th>
<th>PG2 Thompson</th>
<th>PG3 Griffin</th>
<th>PG6-T Enlow</th>
<th>PG7-T Jacks</th>
<th>PG8-T Hecker</th>
<th>PG8-T Person</th>
<th>RWJ</th>
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<tr>
<td>JULY</td>
<td>Surg Onc</td>
<td>MUSC CT Vein Harvest &amp; Perfusion</td>
<td>ADULT THORACIC JUL-SEP</td>
<td>MUSC</td>
<td>VA</td>
<td>MUSC</td>
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<td>AUG</td>
<td>VA Gen Surg</td>
<td>MUSC CT</td>
<td>Vasc Surgery</td>
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<td>MUSC CT</td>
<td>VA CT</td>
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<tr>
<td>OCT</td>
<td>MUSC Thoracic</td>
<td>VA CT</td>
<td>MUSC ADULT CARDIAC OCT-DEC</td>
<td>GEN THOR</td>
<td>MUSC</td>
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<td>Cardiology Inpt</td>
<td>CTICU</td>
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<td>JAN</td>
<td>Heart Tx CHF</td>
<td>GI SURG (Lap)</td>
<td>Transplant</td>
<td>MUSC</td>
<td>MUSC</td>
<td>VA</td>
<td>MUSC</td>
<td>PEDS CT</td>
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<td>MAR</td>
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<td>ENDOV</td>
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<tr>
<td>APR</td>
<td>GI SURG (Panc/Bili)</td>
<td>Imaging &amp; ECHO</td>
<td>Peds Surgery</td>
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<td>PEDS CT</td>
<td>MUSC</td>
<td>VA</td>
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<tr>
<td>MAY</td>
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<td>ENDO</td>
<td>GI Surg (Lap)</td>
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<td>JUNE</td>
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<td>VA GEN SURG</td>
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Goals and Objectives of Specific Rotations (Three-Year Traditional Program)

The goals described below are adjusted for individual residents according to their specific talents and skills; the goals should be regarded, therefore, as only approximations of the progression of training for a particular resident. These goals, listed, are structured to conform with the six competency requirements set forth by the ACGME and TSDA. At all levels of training, residents are expected to participate in teaching younger house officers and medical students, consistent with their own knowledge and experience. Throughout the training of all cardiothoracic residents, an attending surgeon is scrubbed or immediately available for all operations.

YEAR 1

MUH - Adult Cardiac Surgery (9 months)

Goals and Objectives

1. Patient Care

Perform the standard preoperative work-up prior to surgery.
Discuss the preoperative conditions that might adversely impact successful performance of surgery or uncomplicated recovery.
Describe preoperative methods for lessening the impact of such co-morbidities.
Discuss the causes of perioperative infections and techniques for prevention of perioperative infections.
Interpret data presented in a cardiac catheterization report.
Describe and interpret the images obtained at a cardiac catheterization.
Read and interpret an electrocardiogram.
Describe the methods, interpret the reports, and discuss the perioperative uses of pulmonary function testing.
Describe the indications, methods, and interpretation of reports, and discuss the preoperative significance of noninvasive vascular testing.
Discuss the common complications of cardiac surgery, and their diagnosis and treatment.
Describe the available treatments for congestive heart failure and their rationale.
Describe the incisions available for the exposure of thoracic organs, as well as their indications and associated complications.
Perform a median sternotomy and appropriate closure.
Dissect and prepare a pedicled internal mammary artery bypass conduit in ≤30 minutes.
Harvest a saphenous vein conduit expeditiously.
Recognize and respond appropriately to unexpected urgent patient needs in a timely manner.
Describe anticoagulation of cardiac valve patients and the use of Coumadin.
Demonstrate familiarity with mechanical assist devices.

2. Medical Knowledge

Describe the difference between on-pump and off-pump coronary artery bypass grafts.
Discuss the causes of coronary artery disease and possible medical treatment plans for prevention or stabilization.
Describe the indications for surgery for coronary artery disease.
Explain normal clotting function.
Describe acquired abnormalities of clotting function, their causes and treatment.
Demonstrate understanding of the pathophysiology and treatment of heparin-induced thrombocytopenia and thrombosis.
Describe the structure, function, and operation of the cardiopulmonary bypass machine.
Discuss the various methods, advantages, and potential complications of harvesting coronary artery bypass conduits, and their durability.
Demonstrate understanding of the pathological conditions requiring cardiac pacing and the various pacing modes and indications for their use.
Describe electrical parameters and programmable options of cardiac pacing.
Demonstrate the ability to program both temporary and permanent pacemakers.
Document regular participation in CT Residents’ Seminars.

3. Practice-Based Learning and Improvement
Demonstrate ability to practice lifelong learning by reading and discussing current issues of *Annals of Thoracic Surgery* and *Journal of Thoracic and Cardiovascular Surgery*.
Use information technology to do focused clinical research on cardiac surgery issues.
Study, prepare for, and perform satisfactorily on in-training written and oral exams.
Critically evaluate the advantages and disadvantages of preferred surgical techniques of different attending surgeons.

4. Interpersonal and Communication Skills
Demonstrate the ability to hand off and receive patients for coverage while ensuring complete and knowledgeable care during cross coverage.
Deal competently and effectively with referring cardiologists and other members of the patient care team.

5. Professionalism
Demonstrate a working knowledge of the requirements of the Health Insurance Portability and Accountability Act (HIPAA).
Communicate effectively and compassionately with patients and their families.
Demonstrate punctuality for service activities, including conferences and patient care responsibilities.
Respond to pages and requests for assistance consistently in a timely manner.
Demonstrate patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of CT patients.
Exhibit appropriate attire at all times.
Demonstrate integrity and respect for all members of the patient care team.
Dictate timely, clear, and concise CT surgery operative reports.
Document regular attendance at CT Residents’ Seminars on ethics and professionalism.

6. Systems-Based Practice
Perform efficient, timely, and cost effective practice patterns.
Demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT Faculty Division meetings.
Discuss the appropriate use of generic drugs.
MUH - General Thoracic Surgery  (3 months)

Goals & Objectives

1. Patient Care

Communicate effectively and compassionately with patients and their families regarding the diagnoses of lung and esophageal cancer.
Develop and carry out plans for management of patients with lung and esophageal cancer through interactions with attendings and through participation in Thoracic Tumor Board Rounds.
Demonstrate operative skills in general thoracic procedures, such as endoscopy, mediastinoscopy, video assisted thoracoscopic surgery, pulmonary and esophageal resections.
Recognize and respond appropriately to unexpected urgent patient needs in a timely manner.
Read accurately and interpret chest x-rays, CT scans, pulmonary function studies, endoscopic ultrasound results, and PET scans.
Describe the importance of smoking cessation, and learn how to counsel patients to stop.
Supervise PG III general surgery residents in consultations for pulmonary and esophageal diseases.

2. Medical Knowledge

Describe the staging of lung and esophageal cancer, and stage appropriate therapy.
Discuss recent trends in multi-modality therapy for lung and esophageal cancer.
Accurately interpret studies for the diagnosis and staging of lung and esophageal cancer.
Evaluate and interpret test results for benign esophageal disease (manometry, pH probe).
Describe pulmonary physiology and ventilatory support at an advanced level.
Document regular participation in CT Residents’ Seminars.

3. Practice-Based Learning and Improvement

Demonstrate ability to practice lifelong learning by reading current issues of *Annals of Thoracic Surgery* and *Journal of Thoracic and Cardiovascular Surgery* focusing on developments in lung and esophageal cancer care.
Use information technology to perform focused clinical research on general thoracic surgery issues.
Document regular participation in multi-disciplinary conference and clinic.
Assume graded responsibility for post-operative care.
Educate junior residents and medical students in the operating room and on the wards about basic thoracic surgery problems.
Study, prepare for, and perform satisfactorily on in-training written and oral exams.
Critically evaluate the advantages and disadvantages of preferred surgical techniques of different attending surgeons.
4. Interpersonal and Communication Skills

Create and sustain sound relationships with patients and families through effective communication and empathy.
Accept constructive criticism enthusiastically and use it for self-improvement.
Integrate smoothly and relate well to the operating room team.
Deal competently and effectively with referring physicians and other members of the patient care team.
Interact collegially with pulmonary, oncology, GI, and radiation therapy physicians in multidisciplinary clinic and conference.
Manage the surgical team effectively, ensuring that pre-operative studies are known by the member assigned to the case, OR cases are covered, and postoperative care is efficient.

5. Professionalism

Demonstrate punctuality for service activities, including conferences and patient care responsibilities.
Respond to pages and requests for assistance in a consistently timely manner.
Display patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of lung and esophageal surgery patients.
Exhibit appropriate attire at all times.
Demonstrate integrity and respect for all members of the patient care team.
Dictate timely, clear, and concise CT surgery operative reports.
Document regular participation in CT Residents’ Seminars on ethics and professionalism.
Demonstrate knowledge of the ethics of clinical trials and patient confidentiality.

6. Systems-Based Practice

Describe the impact of lung and esophageal cancer on society, particularly in South Carolina.
Perform efficient, timely, and cost effective practice patterns.
Demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT Faculty Division meetings.
Discuss cost-benefit analyses of studies such as screening chest CT, PET scan & endoscopic ultrasound.
Describe appropriate use of routine post-operative tests.
YEAR 2

MUH - Pediatric Cardiac Surgery  (3 months—2nd year)

**Goals and Objectives**

1. **Patient Care**
   
   Interpret and evaluate appropriately preoperative echocardiograms and cardiac catheterizations. Demonstrate technical ability in closed operations, including patent ductus ligation and vascular rings, as well as open operations including secundum and sinus venosus atrial septal defects. Assist competently in neonatal repairs. Execute appropriate postoperative management in children who have undergone congenital cardiac surgery, including appropriate ventilator management. Recognize and respond appropriately to unexpected urgent patient needs in a timely manner.

2. **Medical Knowledge**
   
   Discuss the history of cardiopulmonary bypass and early operations for congenital heart disease. Describe the function, construction, and operation of the cardiopulmonary bypass machine. Describe the physiology, presentation and evaluation of common congenital heart defects. Discuss current surgical management of 1- and 2-ventricle congenital heart repairs. Document regular participation in conferences related to congenital heart disease. Expand knowledge base of current surgical issues and develop peer relationships through attendance at a national CT surgery conference and an industry-sponsored course. Document regular participation in CT Residents’ Seminars.

3. **Practice Based Learning**


4. **Interpersonal and Communication Skills**

   Demonstrate skill in the communication of patient care issues with the congenital heart team and use of sensitivity and tact during discussions with patients’ families. Deal competently and effectively with pediatric cardiologists and other members of the patient care team.

5. **Professionalism**

   Communicate effectively and compassionately with patients and their families.
Demonstrate punctuality for service activities, including conferences and patient care responsibilities. Respond to pages and requests for assistance consistently in a timely manner. Demonstrate patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of pediatric cardiac surgery patients. Exhibit appropriate attire at all times. Demonstrate integrity and respect for all members of the patient care team. Dictate timely, clear, and concise CT surgery operative reports. Exhibit ethical behavior and describe the process of surrogate decision making. Document regular attendance at CT Residents’ Seminars on ethics and professionalism.

6. Systems-Based Practice

Discuss prenatal diagnosis in the care of patients with congenital heart defects. Perform efficient, timely, and cost effective practice patterns. Demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT Faculty Division meetings. Discuss risk-benefit analysis involved in:
   a. ligation of a patent ductus arteriosus in an 800gm premature baby in the NICU
   b. palliation versus repair of symptomatic 3 kg infant with tetralogy of Fallot
Describe the Children’s Heart Program of South Carolina.
MUH Adult Cardiothoracic Surgery

Goals and Objectives

1. Patient Care

Independently cannulate and place a patient on cardiopulmonary bypass.
Demonstrate understanding of and ability to perform various techniques for implantation of an artificial cardiac valve.
Demonstrate facile technique for coronary artery anastomosis.
Implant a pacemaker using transvenous or epicardial leads.
Perform straightforward cardiac transplant operations.
Describe ventricular assist device (VAD) technology and first assist on VAD implantations.
Recognize and respond appropriately to unexpected urgent patient needs in a timely manner.
Recover donated hearts from cadaveric donors.
Independently manage pulmonary, mediastinal, and esophageal cases.

2. Medical Knowledge

Describe the causes of valvular heart disease and the indications for valve replacement or repair.
Discuss the causes and management of cardiomyopathy and congestive heart failure.
Describe the use of different anticoagulation strategies during cardiopulmonary bypass.
Demonstrate understanding of the types, construction, complications, long-term results, and rationale for the choice of artificial cardiac valves.
Discuss the pathologic conditions requiring cardiac pacing.
Describe the various pacing modes and their indications.
Describe the techniques & interpretation of imaging & diagnostic modalities used in cardiothoracic surgery.
Discuss and evaluate current therapeutic issues.
Develop peer relationships through attendance at a national CT surgery conference and an industry-sponsored course.
Demonstrate understanding of the options and rationale for neoadjuvant or postop adjuvant therapy in lung and esophageal cancer.
Describe palliative therapy for obstructing bronchial and esophageal malignancies.
Document regular participation in CT Residents’ Seminars.

3. Practice-Based Learning and Improvement

Demonstrate familiarity with and ability to use the STS database.
Demonstrate ability to practice lifelong learning by reading and discussing current issues of Annals of Thoracic Surgery and Journal of Thoracic and Cardiovascular Surgery.
Use information technology to perform focused clinical research on cardiac surgery issues.
Perform satisfactorily on in-training written and oral exams.
Critically evaluate the advantages & disadvantages of preferred surgical techniques of different attending surgeons.

4. Interpersonal and Communication Skills

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Effectively request and utilize consultation from supportive medical services. Provide complete and adequate information regarding patient status to the patient and family while remaining supportive. Demonstrate the ability to hand off and receive patients for coverage while ensuring complete and knowledgeable care during cross coverage. Deal competently and effectively with referring cardiologists and other members of the patient care team.

5. Professionalism

Project a demeanor suggesting knowledge, competence, and compassion. Serve as a well-recognized resource for CT residents and for other services regarding complex surgical problems. Communicate effectively and compassionately with patients and their families. Demonstrate punctuality for service activities, including conferences and patient care responsibilities. Respond to pages and requests for assistance in a consistently timely manner. Demonstrate patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of CT patients. Exhibit appropriate attire at all times. Demonstrate integrity and respect for all members of the patient care team. Dictate timely, clear, and concise CT surgery operative reports. Document regular attendance at CT Residents’ Seminars on ethics and professionalism.

6. Systems-Based Practice

Perform efficient, timely, and cost effective practice patterns. Demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT Faculty Division meetings. Demonstrate the ability to balance the needs of multiple patients in planning service activities and operating schedules.
VA Medical Center Adult Cardiothoracic Surgery (6 months)

Goals and Objectives

1. Patient Care

Cannulate and place a patient on cardiopulmonary bypass.
Describe and perform the various techniques for implant of an artificial cardiac valve.
Demonstrate facile technique for coronary artery anastomosis.
Demonstrate the ability to implant a pacemaker using transvenous or epicardial leads.
Recover donor hearts effectively and efficiently.
Independently manage pulmonary, mediastinal, and esophageal cases.
Recognize and respond appropriately to unexpected urgent patient needs in a timely manner.
Coordinate transfer of cardiac patients from other institutions.
Efficiently manage VA outpatient clinic.

2. Medical Knowledge

Describe the causes of valvular heart disease and the indications for valve repair or replacement.
Discuss different anticoagulation strategies during cardiopulmonary bypass
demonstrate understanding of the types, construction, complications, long-term results, and rationale for the choice of artificial cardiac valves.
Describe the pathologic conditions requiring cardiac pacing.
Discuss the various pacing modes and their indications.
Demonstrate understanding of the measurement of electrical parameters and programmable options of cardiac pacing.
Interpret accurately imaging and diagnostic modalities used in cardiothoracic surgery.
Describe options involved in offering patients neoadjuvant or postop adjuvant therapy, and their rationale.
Discuss the rudiments of targeted biologic therapy.
Discuss palliative therapy for obstructing bronchial and esophageal malignancies.
Document regular participation in CT Residents’ Seminars.

3. Practice-Based Learning and Improvement

Enter data into the STS database in an accurate and timely manner.
Demonstrate ability to practice lifelong learning by reading and discussing current issues of Annals of Thoracic Surgery and Journal of Thoracic and Cardiovascular Surgery.
Use information technology to perform focused clinical research on cardiac surgery issues.
Perform satisfactorily on in-training written and oral exams.
Critically evaluate the advantages and disadvantages of preferred surgical techniques of different attending surgeons.
Describe the VA Cardiac Quality Improvement Program.
4. **Interpersonal and Communication Skills**

Effectively request and utilize consultation from supporting medical services.
Provide complete and adequate information regarding patient status to the patient and family while remaining supportive.
Demonstrate the ability to hand off and receive patients for coverage while ensuring complete and knowledgeable care during cross coverage.
Deal competently and effectively with referring cardiologists and other members of the patient care team.

5. **Professionalism**

Project a demeanor suggesting knowledge, competence and compassion.
Serve as a well-recognized resource for CT residents and for other services regarding complex surgical problems.
Communicate effectively and compassionately with patients and their families.
Demonstrate punctuality for service activities, including conferences and patient care responsibilities.
Respond to pages and requests for assistance in a consistently timely manner.
Demonstrate patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of CT patients.
Exhibit appropriate attire at all times.
Demonstrate integrity and respect for all members of the patient care team.
Dictate timely, clear, and concise CT surgery operative reports.
Document regular attendance at CT Residents’ Seminars on ethics and professionalism.

6. **Systems-Based Practice**

Demonstrate ability to balance the needs of multiple patients in the planning service activities and operating schedules.
Perform efficient, timely, and cost effective practice patterns.
Demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT Faculty Division meetings.
VASCULAR SURGERY/INTERVENTIONAL RADIOLOGY (One Month)

Educational Goals
At the completion of this rotation, the resident will:
1. know the vascular and cardiothoracic diseases treatable by interventional radiology
2. understand and perform percutaneous vascular access and selective catheterization
3. know the current status and use of percutaneous devices used to treat cardiothoracic and vascular diseases
4. perform common open vascular operations

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. obtain vascular control of diseased or traumatically occluded blood vessels using:
   a. digital compression
   b. vascular clamps
   c. balloon occlusion
   d. vessel loop / Rummel tourniquet
2. participate in thromboendarterectomy and thrombectomy/thromboembolectomy
3. demonstrate appropriate vascular suture techniques
4. evaluate and manage sympathectomy procedures
5. demonstrate the appropriate incisions and exposure of:
   a. carotid arterial system
   b. portal venous system
   c. arteriovenous fistula
   d. abdominal aorta and its major branches
   e. peripheral arterial system
6. obtain vascular control of major vessels:
   a. aorta
   b. vena cava
7. participate in endarterectomy and bypass grafting
8. perform selected operative procedures or selected parts of the following operative procedures under supervision:
   a. aortic aneurysm repair
   b. carotid endarterectomy
   c. peripheral vascular trauma
   d. femoral-popliteal occlusive disease
   e. aorto-iliac occlusive disease
   f. correction of portal hypertension
9. select and use proper advanced techniques in managing patients with a variety of vascular disorders such as:
   a. ruptured aortic aneurysm
   b. suprarenal aortic aneurysm
   c. renovascular hypertension
   d. central vascular trauma
   e. femoral tibial bypasses
10. perform alternative methods of bypass grafting such as:
    a. sequential and composite techniques
    b. indirect revascularization
    c. in situ techniques
    d. extra-anatomic bypass, principles and techniques
11. manage prosthetic graft infections to include:
   a. selection of appropriate graft materials
   b. alternate route selection for revascularization
   c. diagnosis
   d. timing of intervention
12. Familiarity with access techniques
13. Techniques of selective catheterization
14. Primary operator skills in diagnostic and therapeutic procedures

**Medical Knowledge**

At the completion of this rotation, the resident will know:

1. differentiation between different operative approaches to the vascular system to include:
   a. handling of vascular tissues
   b. principles of vascular bypass grafting
   c. emergency vascular surgery
   d. reoperative vascular surgery
   e. principles of endarterectomy
   f. incisions and exposure
2. the operative exposure of the major vessels, including:
   a. aortic arch
   b. proximal subclavian
   c. carotid artery
   d. suprarenal aorta
   e. infrarenal aorta
   f. femoral artery
   g. descending thoracic aorta
   h. popliteal artery
3. the etiology, microbiology, and treatment of diabetic foot infection
4. the prevention and management of operative and postoperative complications, including graft infections, ischemic bowel, graft thrombosis, and extremity ischemia
5. the principles of reoperative vascular surgery
6. how to manage vascular surgical emergencies such as acute tissue ischemia or major hemorrhage (traumatic or ruptured aneurysm)
7. the surgical techniques available for managing the following vascular disorders:
   a. femoral-popliteal occlusion
   b. tibial arterial occlusion
   c. carotid stenosis
   d. abdominal aortic bypass or aneurysmectomy/aneurysmorrhaphy
8. the management of complex vascular problems considering the following factors:
   a. morbidity and mortality
   b. advanced surgical techniques
   c. microvascular techniques
   d. endoluminal grafting
   e. endoscopy
9. the management of prosthetic graft infections, including:
   a. use of alternate routes for revascularization
   b. use of alternative graft materials
   c. diagnosis
10. complications of common major vascular procedures such as:
    a. lower extremity vascular reconstruction
    b. carotid endarterectomy
c. aortic reconstruction
11. Familiarity with correct indications, contraindications, risks and complications of Interventional Radiology procedures
12. Theoretical information about vascular diseases GI, Urologic and thoracic diseases, treatable by Interventional Radiology
13. Knowledge of patient preparation, pre and post procedure care
14. Knowledge about informed consent specific for Interventional Radiology procedures
15. Knowledge of specific interpretation and dictation of interventional procedures
16. Knowledge of pharmacology applied to Interventional Radiology procedures

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
6. use information technology to manage and provide patient-related information

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   a. ethical principles pertaining to provision of or withholding of clinical care
   b. maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. apply the decision making process in analyzing complex vascular diseases, including the following:
   a. renovascular disease
   b. venous disease
   c. aneurysmal disease
d. cerebrovascular problems
e. mesenteric vascular disease
f. lower extremity arterial occlusion
2. describe the role of a tertiary referral center in the surgical management of simple and complex problems
3. use generic drugs appropriately
4. discuss the responsibility of the surgeon in managing indigent patients
5. identify cases appropriate for risk management
6. describe the role of health care managers and surgeon-extenders in surgery
7. advocate for quality patient surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   a. CT Surgery Tuesday morning resident teaching conferences
   b. CT Surgery Morbidity and Mortality Conference
   c. CT Surgery Journal Club
   d. Heart & Vascular Morbidity and Mortality Conference
   e. Surgical Mortality and Morbidity Conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
YEARS 3

MUH Adult Cardiothoracic Surgery (6 months)

Goals and Objectives

1. Patient Care

- Perform complex thoracic cases competently (e.g., Pancoast tumors, colon interpositions, complex video-assisted surgery).
- Describe and competently perform the appropriate cardiac incisions for exposure of cardiac valves.
- Describe surgical steps and competently perform mitral and tricuspid valve repair.
- Demonstrate ability to use stabilization devices performing off-pump coronary artery bypass surgery.
- Demonstrate sound strategy and proficient technical performance of complex thoracic aortic surgical procedures.
- Proficiently conduct complex cardiac surgical procedures, such as multiple valve repair/replacement or combined valve/coronary bypass.
- Exhibit the capacities of a mature cardiac surgeon, capable of dealing with all but the most complex intraoperative and postoperative situations.
- Perform all types of cardiac transplants under the supervision of attending transplant surgeon.
- Demonstrate proficiency in donor organ procurement.
- Describe all aspects of ventricular assist technology; indications, implantation techniques, and management protocols.

2. Medical Knowledge

- Discuss all aspects of the causes and treatment of cardiac diseases.
- Describe the types and etiologies of thoracic aortic disease and options for therapy, including use profound hypothermic circulatory arrest.
- Discuss the medical, interventional, and surgical treatment options for atrial fibrillation.
- Demonstrate understanding of all aspects of candidate selection, pre-transplant management, immunosuppressive protocols, intraoperative management, postoperative management, and the diagnosis and treatment of post-transplant complications.
- Describe physiology and anatomy of lung transplantation, and details of procedure.
- Describe new biologic treatment of lung cancer.
- Expand knowledge base of current therapeutic issues and develop peer relationships through attendance at a national CT surgery conference and an industry-sponsored course.
- Document regular participation in CT Residents’ Seminars.

3. Practice-Based Learning and Improvement

- Demonstrate independent, critical evaluation of clinical, interpersonal, and technical performance and demonstrate adaptive ability to correct deficiencies.
- Demonstrate independent functioning, incorporating not only current practice but also developing technologies in cardiothoracic surgery, cardiac transplantation and mechanical assistance.

Use information technology to perform focused clinical research.

Educate junior residents and medical students in the operating room and on the wards about basic thoracic surgery problems.

Perform satisfactorily on in-training written and oral exams.

4. Interpersonal and Communication Skills

Demonstrate ability to effectively run a busy CT surgical service, coordinate educational activities, manage operating room and clinic schedules, with a pleasant, motivating attitude and demeanor.

Exhibit competency and confidence in dealing with all members of CT surgical team, and all patients and family members, even the most difficult.

Administer monthly resident, physician assistant, and nurse practitioner call schedules in conformity with 80-hour workweek requirements.

Demonstrate the ability to hand off and receive patients for coverage while ensuring complete and knowledgeable care during cross coverage.

Communicate effectively with referring physicians and other members of the patient care team.

5. Professionalism

Demonstrate and project a demeanor appropriate for an independently functioning consultant in cardiothoracic surgery.

Develop a comprehensive CT case list and curriculum vitae in preparation for ABTS examinations and for job interviews.

Communicate effectively and compassionately with patients and their families.

Demonstrate punctuality for service activities, including conferences and patient care responsibilities.

Respond to pages and requests for assistance in a consistently timely manner.

Demonstrate patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of CT patients.

Exhibit appropriate attire at all times.

Demonstrate integrity and respect for all members of the patient care team.

Dictate timely, clear, and concise CT surgery operative reports.

Document regular attendance at CT Residents’ Seminars on ethics and professionalism.

Complete application to American Board of Thoracic Surgery.

6. Systems-Based Practice

Apply all cardiac and thoracic treatment protocols in the most complex clinical situations, taking into account cost-effectiveness and high quality.

Identify proactively and treat efficiently the full range of complications after cardiothoracic surgery.

Demonstrate comprehensive ability to enter and review patient data electronically.

Critically evaluate the computer-based patient management systems currently in use.
Demonstrate a working knowledge of the databases maintained by the Society for Thoracic Surgeons (STS), International Society for Heart and Lung Transplantation (ISHLT) and the United Network for Organ Sharing (UNOS).

Demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT Faculty Division meetings.

**VA Medical Center Adult Cardiothoracic Surgery (6 months)**

**Goals & Objectives (General Thoracic Surgery)**

1. **Patient Care**

   Communicate effectively and compassionately with patients and their families regarding the diagnoses of lung and esophageal cancer.
   
   Develop and carry out plans for management of patients with lung and esophageal cancer through interactions with attendings and through participation in Thoracic Tumor Board.
   
   Perform complex thoracic cases competently (e.g., Pancoast tumors, colon interpositions, complex video-assisted surgery).
   
   Describe the importance of smoking cessation, and learn how to counsel patients about its importance.

2. **Medical Knowledge**

   Describe the staging of lung and esophageal cancer, and stage appropriate therapy.
   
   Discuss recent trends in multi-modality therapy for lung and esophageal cancer.
   
   Describe physiology and anatomy of lung transplantation, and details of procedure.
   
   Describe new biological treatment of lung cancer.
   
   Accurately interpret studies for the diagnosis and staging of lung and esophageal cancer.
   
   Read accurately and interpret chest x-rays, CT scans, pulmonary function studies, endoscopic ultrasound results, and PET scans.
   
   Evaluate and interpret test results for benign esophageal disease (manometry, pH probe).
   
   Describe pulmonary physiology and ventilatory support at an advanced level.
   
   Document regular participation in CT Residents’ Seminars.
   
   Manage preoperative evaluation and postoperative follow-up of general thoracic patients in VA clinic

3. **Practice-Based Learning and Improvement**

   Demonstrate ability to practice lifelong learning by reading current issues of *Annals of Thoracic Surgery* and *Journal of Thoracic and Cardiovascular Surgery* focusing on developments in lung and esophageal cancer care.
   
   Use information technology to perform focused clinical research on general thoracic surgery issues.
   
   Document regular participation in multi-disciplinary conference and clinic.
   
   Perform satisfactorily on in-training written and oral exams.
Critically evaluate the advantages and disadvantages of preferred surgical techniques of different attending surgeons.

4. Interpersonal and Communication Skills

Create and sustain sound relationships with patients and families through effective communication and empathy.
Accept constructive criticism enthusiastically and use it for self-improvement.
Integrate smoothly and relate well to the operating room team.
Deal competently and effectively with referring physicians and other members of the patient care team.
Interact collegially with pulmonary, oncology, GI, and radiation therapy physicians in multidisciplinary clinic and conference.
Manage the surgical team effectively, ensuring that pre-operative studies are known by the member assigned to the case, OR cases are covered, and postoperative care is efficient.

5. Professionalism

Communicate effectively and compassionately with patients and their families.
Demonstrate punctuality for service activities, including conferences and patient care responsibilities.
Respond to pages and requests for assistance in a consistently timely manner.
Demonstrate patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of lung and esophageal surgery patients.
Exhibit appropriate attire at all times.
Demonstrate integrity and respect for all members of the patient care team.
Dictate timely, clear, and concise CT surgery operative reports.
Document regular participation in CT Residents’ Seminars on ethics and professionalism.
Demonstrate knowledge of the ethics of clinical trials and patient confidentiality.

6. Systems-Based Practice

Describe the impact of lung and esophageal cancer on society, particularly in South Carolina.
Perform efficient, timely, and cost effective practice patterns.
Demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT Faculty Division meetings.
Discuss cost-benefit analyses of studies such as screening chest CT, PET scan and endoscopic ultrasound.
Describe appropriate use of routine post-operative tests.
SIX-YEAR INTEGRATED PROGRAM
GOALS AND OBJECTIVES OF SPECIFIC ROTATIONS

PGY 1 ROTATION: SURGICAL ONCOLOGY

Educational Goals
During this rotation, the resident will:

• acquire a broad knowledge base, good judgment, and appropriate technical skills for the surgical treatment of cancer
• learn about the complex co-morbidities often associated with the patient with cancer
• be taught the limitations of surgery and the areas wherein the best combinations of surgery and other modalities have not been reached

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:

1. perform an appropriate and adequate history and physical examination of the patient with cancer

2. participate in surgical procedures and develop the skills to be a superior first assistant with respect to:
   • counter-traction
   • suction
   • knot-tying
   • hemostasis

3. skillfully place:
   • nasogastric tubes
   • peripheral IV lines
   • urinary bladder catheter
   • appropriate central venous lines, specific for:
     • antibiotics
     • chemotherapy
     • bone marrow transplant

4. perform interventions necessary to obtain tissue for diagnosis:
   • needle biopsy
   • true-cut biopsy
   • incisional biopsy
   • excisional biopsy

5. ensure that an adequate amount of tissue required for diagnosis has been obtained and delivered to the appropriate resource in the appropriate state

6. Be aware of the limitations of surgery and the areas wherein the very best combination of surgery and other modalities has not been reached. Patients in this category ideally placed on protocol. Such patients should be enthusiastically identified

Medical Knowledge
At the completion of this rotation, the resident will know:
1. how cancer is diagnosed and what information is clinically useful from the histology of any given cancer
2. how to recognize and work up co-morbidities, especially in the elderly, consulting colleagues in anesthesiology, cardiology, and radiology
3. the frailties of the population we treat
4. in consultation with pathologists, strategies necessary to obtain tissue for diagnosis:
   a. needle biopsy
   b. incisional biopsy
   c. true-cut biopsy
   d. excisional biopsy
   e. stereotactic biopsy
5. which tissues should be examined freshly vs preserved, must be sent to special laboratories for special studies, and may be safely committed to formalin
6. the potential complications associated with placing central venous lines:
   a. hemothorax
   b. pneumothorax
   c. eccentric line placement

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. develop and use a method to record and track over time the results of interventions performed by the resident
2. present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention
3. analyze a study’s design and use or misuse of statistics in published papers
4. use information systems to acquire pertinent information regarding surgical problems

Interpersonal Communications Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. provide information to patients using effective explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. describe acceptable methods to handle difficult interactions, such as:
   a. preoperative counseling of an extremely anxious patient
   b. dealing with a patient who sustained a severe, debilitating complication from a cancer operation elsewhere

Professionalism
At the completion of this rotation, the resident will be:
1. respectful and compassionate with patients and colleagues
2. responsive to the needs of patients and society, effacing self-interest
3. accountable to patients, society, and the profession of surgery
4. committed to excellence and on-going professional development
5. wear appropriate attire at all times
6. committed to ethical principles regarding offering or withholding clinical care
7. able to obtain appropriately informed consent for planned interventions
8. committed to confidentiality of patient information
9. sensitive and responsive to patients’ culture, age, gender, and disabilities
**Systems-based Practice**

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

1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. demonstrate awareness of the costs associated with providing care to patients
3. practice cost-effective health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
4. practice cost-effective health care that does not compromise patient care
5. discuss the responsibility of the surgeon in managing indigent patients
6. direct patients and their families to individuals within the institution who can help them to understand complex issues of societal support and resources
7. discuss the role of health care managers and surgeon-extenders in surgery
8. advocate for high quality surgical care

**Duties and Responsibilities**

1. Attend all teaching functions:
   a. CT Surgery Tuesday morning conferences
   b. CT Surgery Morbidity & Mortality conferences
   c. Surgical Oncology Conferences
   d. Heart & Vascular Morbidity and Mortality conference
2. Maintain an outside reading program
3. Participate actively in Journal Club
4. Prepare a clinical subject for presentation or publication
5. Participate in the in-house call schedule
6. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
7. Contact senior house officers or attending surgeons when appropriate
8. Work with senior residents and attending surgeons as a team
9. Arrive in the operating room well read about the patient’s cancer, the planned surgical strategy, and the expected outcome of the procedure
10. Perform various types of biopsies in the Ambulatory OR, supervised by attending surgeons
11. Assist in the management of inpatients on the Oncology Surgery Service
12. Assist in the placement of central lines
PGY 1 ROTATION: VETERAN'S ADMINISTRATION GENERAL SURGERY

Educational Goals
At the completion of this rotation, the resident will:
• be able to evaluate patients for general surgical diseases and perform preoperative assessment and postoperative care of patients undergoing major surgery
• understand the fundamental principles of managing patients with surgical diseases

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. demonstrate competence in basic techniques such as:
   • needle aspiration of small or large lesions
   • excision of small subcutaneous lesions
   • suture closure of wounds
   • insertion of Swan-Ganz catheters
   • thoracentesis and paracentesis
   • venous access procedures
   • exposure and retraction
   • knot-tying
2. perform and document the preoperative assessment and postoperative care of surgical patients, including management of intravenous fluids and enteral and parenteral nutrition
3. evaluate patients for general surgical and vascular disease, including the preoperative assessment and postoperative care of patients undergoing major procedures
4. participate in amputations with specific attention to demarcation levels

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the regional anatomy and vasculature of the abdominal wall, the peritoneal cavity, liver, gallbladder, spleen, pancreas, and the intestinal organs
2. the differential diagnosis of the acute abdomen
3. the differential diagnosis, workup, and management of:
   • solitary neck mass
   • acute appendicitis
   • diverticulitis
   • soft tissue mass
   • inflammatory bowel disease
   • Upper GI bleeding
   • hyperparathyroidism
   • biliary colic
   • Lower GI bleeding
   • breast lesions
   • acute cholecystitis
   • gastric lesions
   • hernias
• cholangitis
• colorectal lesions
• anorectal disorders
4. the fundamental elements of non-operative care of the surgical patient
5. the fundamental elements of intensive care of surgical patients
• fluid management
• ventilator management
• sepsis
• medications
• antibiotics
• hyperalimentation
• central line monitoring
6. the role of the following radiologic studies in the assessment of soft tissue and abdominal disorders:
• radiographs
• nuclear medicine studies
• MRI
• ultrasound
• CT scan
7. human arterial and venous anatomy and related regional anatomy
8. basic arterial and venous hemodynamics
9. the anatomy and pathophysiology of the arterial wall
10. life-threatening signs of vascular disease and indicate when immediate intervention is required
11. differentiation between the following diagnostic tools available for assessing vascular disease and the relative contribution of each:
• angiography
• ultrasound
• MR imaging
• CAT scanning
12. the pathophysiology, clinical manifestations, and therapeutic options of specific categories of vascular disease:
• arterial disease
• venous disease
• occlusive disease
• atherosclerosis and related disorders
• thromboembolic disease
• aneurysmal disease
• pulmonary embolism
13. interaction of cardiovascular and pulmonary systems
14. basic principles of Doppler ultrasound for performing bedside arterial and venous Doppler testing
15. the principles of noninvasive laboratory diagnosis, including the role and limitations of the vascular laboratory:
• ABI / waveforms
• venous duplex
• graft flow studies
• carotid duplex
• PPG / LRR venous
16. the principles of care for ischemic limbs
17. the fundamental elements of non-operative care of the vascular patient, including the role of risk assessment and preventative measures
18. the hemodynamics and pathophysiology of specific clinical symptoms:
  • transient ischemic attack
  • renovascular hypertension
  • mesenteric angina
  • claudication
  • angina pectoris
  • stroke
  • arteriovenous fistula
19. differentiation between acute arterial and acute deep venous occlusion
20. how to formulate a plan for assessing operative risk in these categories:
  • cardiac
  • renal
  • anesthesia
  • pulmonary
  • metabolic
21. the use of adjunctive measures such as:
  • antibiotics
  • thrombolytic agents
  • antiplatelet agents
  • anticoagulants

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. develop and use a method to record and track over time the results of interventions performed by the resident
2. effectively teach students and colleagues
3. present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention
4-5. analyze a study’s design and use or misuse of statistics in published papers
5-6. use information systems to acquire pertinent information regarding surgical problems
6. describe critical factors for decision making in vascular surgery
  • risk:reward ratio
  • morbidity and mortality probability
  • preoperative and postoperative assessment
  • noninvasive laboratories, duplex scanning
  • role of advanced radiologic techniques: angioplasty, computed tomography scanning, MRI and MRA imaging
6.7 apply the decision making process in analyzing complex vascular diseases, including the following:
  • cerebrovascular problems
  • mesenteric vascular disease
  • renovascular disease
  • aneurysmal disease
  • lower extremity arterial occlusion

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• venous disease

Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. provide information to patients using effective explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. respectful and compassionate with patients and colleagues
2. responsive to the needs of patients and society, effacing self-interest
3. accountable to patients, society, and the profession of surgery
4. committed to excellence and on-going professional development
5. wear appropriate attire at all times
6. committed to ethical principles regarding offering or withholding clinical care
7. able to obtain appropriately informed consent for planned interventions
8. committed to confidentiality of patient information
9. sensitive and responsive to patients’ culture, age, gender, and disabilities
10. punctual for service activities, including conferences and patient care responsibilities
11. responsive to pages and requests for assistance in a timely manner
12. appropriately attired at all times

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. demonstrate awareness of the costs associated with providing care to patients
3. practice cost-effect health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
4. practice cost-effect health care that does not comprise patient care
5. discuss the responsibility of the surgeon in managing indigent patients
6. direct patients and their families to individuals within the institution who can help them to understand complex issues of societal support and resources
7. discuss the role of health care managers and surgeon-extenders in surgery
8. advocate for high quality surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   • CT Surgery Tuesday morning conferences
   • CT Surgery Morbidity and Mortality conference
   • VA Surgical Conference
   • VA Vascular Conference
   • CT Surgery Journal Club
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s cancer, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
PGY 1 ROTATION: MUSC ADULT CT SURGERY

Educational Goals
At the completion of this rotation, the resident will:

• provide preoperative and postoperative assessment and care for patients undergoing major pulmonary and cardiac surgical procedures
• assess patient’s pulmonary and cardiac systems using appropriate skills in history-taking and clinical examination
• evaluate patients with cardiac disease
• perform assessment and apprise senior residents about consultations
• help manage thoracic trauma victims

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:

• perform workup and preoperative check of patients in the same-day surgery unit, who are scheduled to undergo cardiac surgery
• observe and assist in the operating room
• provide preoperative and postoperative assessment and care for patients undergoing major cardiac surgical procedures
• assess patient’s pulmonary and cardiac systems using appropriate skills in history-taking and clinical examination
• manage routine postoperative drains, devices, and conditions:
  a. insertion and removal of chest tubes
  b. mediastinal drainage tubes
  c. thoracic and sternotomy incisions
  d. chest drainage systems
  e. pneumothorax and hemothorax
  f. pacemakers
• demonstrate basic skills used in cardiothoracic surgery:
  a. removal of thoracic drains
  b. insertion of chest tubes
  c. removal of pacemaker wires
  d. thoracentesis
  e. insertion of subclavian intravenous lines
  f. removal of chest tubes
• show increasing skill in basic surgical techniques:
  a. knot tying
  b. closing incisions (thoracic, leg, and sternotomy)

Medical Knowledge
At the completion of this rotation, the resident will know:

• the anatomy of the lungs and heart and their relationship to adjacent structures
• the physiology of airway mechanics gas exchange and blood flow
• the diagnostic tools available for assessing pulmonary and cardiac disease:
  a. CXR
  b. pulmonary function tests
  c. CT scans
d. cardiac catheterizations
e. nuclear scans
f. echocardiography

- the principles of preoperative assessment and postoperative care of patients undergoing major cardiac surgical procedures
- how to identify and pharmacologically treat arrhythmias
- how to recognize potentially urgent pulmonary and cardiac situations:
  a. pulmonary emboli
  b. pneumothorax
  c. cardiac tamponade
d. arrhythmia
e. pneumonia

- the physiologic derangements caused by obstruction of the coronary circulation
- the natural history and clinical presentation of patients with valvular heart disease
- the techniques for diagnosis and therapeutic interventions for the treatment of:
  • cardiac tamponade
  • pericardial effusions
  • constrictive pericardial disease

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
6. use information technology to manage and provide patient-related information

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   a. ethical principles pertaining to provision of or withholding of clinical care
b. maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

**Systems-based Practice**
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
3. practice cost-effective health care that does not compromise patient care
4. discuss the responsibility of the surgeon in managing indigent patients
5. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
6. identify cases appropriate for risk management
7. describe the role of health care managers and surgeon-extenders in surgery
8. advocate for quality patient surgical care

**Duties and Responsibilities**
1. Attend all teaching functions, including:
   - CT Surgery Tuesday morning conference
   - CT Surgery Morbidity and Mortality conference
   - CT Surgery Journal Club
   - Heart & Vascular Morbidity & Mortality Conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&P s, electronic orders, and progress notes
PGY 1 ROTATION: MUSC THORACIC

Educational Goals
At the completion of this rotation, the resident will be able to:
1. provide preoperative and postoperative assessment and care for patients undergoing major pulmonary surgical procedures
2. assess patients' pulmonary systems using appropriate skills in history taking and clinical examination
3. evaluate patients with pulmonary disease

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. perform workup and preoperative check of patients undergoing thoracic surgery
2. provide preoperative and postoperative assessment and care for patients undergoing major pulmonary surgical procedure
3. evaluate patients with pulmonary disease, with understanding of:
   - pulmonary function tests
   - common bronchodilator therapy
   - lung cancer staging process
4. observe and assist in the operating room
5. manage routine postop drains, devices, and conditions:
   - insertion and removal of chest tubes
   - chest tube drainage
   - pneumothorax and hemothorax
   - jejunostomy tubes
   - gastrostomy tube
   - mediastinal drainage tubes
   - thoracic and median sternotomy incisions
   - removal of chest tubes
   - insertion of chest tubes
   - removal of thoracic drains
   - thoracentesis
6. improve competence in basic surgical skills:
   - knot tying
   - closing thoracic incisions

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the anatomy of the lungs and their relationship to adjacent structures
2. the physiology of airway mechanics, gas exchange, and blood flow
3. the diagnostic tools available for assessing pulmonary disease
   - CXR
   - CT scan
   - PET scan
   - nuclear scans
   - pulmonary function tests
4. the principles of preoperative assessment and postoperative care of patients undergoing major pulmonary surgical procedures
5. the pharmacology of drugs used in the treatment of routine arrhythmias
6. how to recognize potential urgent pulmonary situations:
   - pulmonary emboli
   - pneumonia
   - pneumothorax
   - arrhythmia

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. develop and use a method to record and track over time the results of interventions performed by the resident
2. effectively teach students and colleagues
3. present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention
4. analyze a study’s design and use or misuse of statistics in published papers
5. use information systems to acquire pertinent information regarding surgical problems

Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. provide information to patients using effective explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. respectful and compassionate with patients and colleagues
2. responsive to the needs of patients and society, effacing self-interest
3. accountable to patients, society, and the profession of surgery
4. committed to excellence and on-going professional development
5. wear appropriate attire at all times
6. committed to ethical principles regarding offering or withholding clinical care
7. able to obtain appropriately informed consent for planned interventions
8. committed to confidentiality of patient information
9. sensitive and responsive to patients’ culture, age, gender, and disabilities
10. punctual for service activities, including conferences and patient care responsibilities
11. respond to pages and requests for assistance in a timely manner
12. appropriately attired at all times

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. demonstrate awareness of the costs associated with providing care to patients
3. practice cost-effect health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
4. practice cost-effect health care that does not comprise patient care
5. discuss the responsibility of the surgeon in managing indigent patients
6. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
7. discuss the role of health care managers and surgeon-extenders in surgery
8. advocate for high quality surgical care

**Duties and Responsibilities**

1. Attend all teaching functions, including Surgery Basic Science Conference
2. Maintain an outside reading program
3. Participate actively in Journal Club
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
PGY 1 ROTATION: CARDIOLOGY INPATIENT

Educational Goals
At the completion of this rotation, the resident will:
- understand the diagnosis and treatment alternatives for ischemic heart disease
- know how to diagnose and what are the treatment alternatives for valvular heart disease
- understand the diagnosis and treatment of congestive heart failure

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. perform a comprehensive history and physical with advanced cardiac examination
2. describe the indications for various forms of cardiac testing
3. provide proper care for patients with
   - acute myocardial infarction
   - various types of valvular pathology
   - congestive heart failure

Medical Knowledge
At the completion of this rotation, the resident will know:
1. how to interpret accurately:
   - electrocardiograms
   - nuclear cardiac studies
   - transthoracic and transesophageal echocardiograms
2. the appropriate indications for cardiothoracic surgical consultation
3. how to apply HIPAA laws

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:

Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
- successfully care for the cardiac patient as a team member
- transfer care of patients properly when signing out and covering other physicians’ patients
- request consultation from other services in a proper manner

Professionalism
At the completion of this rotation, the resident will be:
1. prompt in dictating discharge summaries within 24 hours of discharge
2. respectful and compassionate with patients and colleagues
3. responsive to the needs of patients and society, effacing self-interest
4. accountable to patients, society, and the profession of surgery
5. committed to excellence and on-going professional development
6. wear appropriate attire at all times
7. committed to ethical principles regarding offering or withholding clinical care
8. able to obtain appropriately informed consent for planned interventions
9. committed to confidentiality of patient information
10. sensitive and responsive to patients’ culture, age, gender, and disabilities
11. punctual for service activities, including conferences and patient care responsibilities
12. responsive to pages and requests for assistance in a timely manner
13. appropriately attired at all time
14. meticulous in preparing clear and complete progress notes whenever clinical status
    changes, and at least daily

Systems Based Practice
At the completion of this rotation, the resident will be able to:
1. perform efficient, timely and cost effective practice patterns
2. discuss appropriate use of generic drugs
3. practice evidence-based medicine

Duties and Responsibilities
1. Attend all teaching functions, including:
   • CT Surgery Tuesday morning conferences
   • CT Surgery Morbidity and Mortality Conferences
   • CT Surgery Journal Club
   • Heart & Vascular Morbidity and Mortality conference
   • Division of Cardiology conferences
2. Maintain an outside reading program
3. Participate actively in cardiology and surgery journal clubs
4. Participate in the in-house call schedule
5. Work with cardiology fellows and attendings, as well as nursing staffs and
   technicians in cardiology laboratories as a team
PGY 1 ROTATION: TRANSPLANT SURGERY

Educational Goals
During this rotation, the resident will:
- learn how to evaluate organ donors
- be taught the immunologic basis of graft rejection
- learn the indications, contraindications, and selection of patients for transplantation
- observe and understand operations for harvest and transplantation of kidneys, liver, and pancreas
- manage transplant recipients postoperatively, including immunosuppression
- diagnose and treat organ transplant graft rejection

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. perform different types of access procedures and understand their utility
2. apply the fundamentals of local anesthesia techniques
3. describe the basics of vascular surgical techniques
4. insert peritoneal dialysis catheters using basic techniques
5. medically manage electrolyte abnormalities, with special attention to preoperative preparation and postoperative care
6. recognize and manage complications of access procedures (e.g., infection and ischemia)

Medical Knowledge
At the completion of this rotation, the resident will know:
1. how to diagnose brain death
2. contraindications to organ donation
3. the details of disclosure in the consent process
4. the principles of organ preservation
5. the process of organ recovery
6. the immunologic basis of graft rejection
7. the physiology and diagnosis of end stage kidney and liver disease
8. indications, contraindications, and the selection process of potential recipients
9. how to prepare recipients preoperatively
10. the pathophysiology of post-transplant immunosuppression
11. types of immunosuppressive drugs used and indications for their use
12. the interaction of drugs with immunosuppressive agents
13. the effects of immunosuppression and its complications
14. how to diagnose rejection and manage end-stage renal disease
15. the metabolic and electrolyte abnormalities in end-stage renal disease
16. the indications for vascular access procedures
17. treatment options for a patient with end-stage renal disease
18. the indications for peritoneal dialysis

Practice-based and Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
6. use information technology to manage and provide patient-related information

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   • ethical principles pertaining to provision of or withholding of clinical care
   • maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
3. practice cost-effective health care that does not compromise patient care
4. use generic drugs appropriately
5. demonstrate understanding of clinical practice management and human resource issues
6. discuss the responsibility of the surgeon in managing indigent patients
7. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
8. identify cases appropriate for risk management
9. describe the role of health care managers and surgeon-extenders in surgery
10. advocate for quality patient surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   • CT Surgery Tuesday morning conferences
   • CT Surgery Morbidity and Mortality conferences
• CT Surgery Journal Club
• Heart & Vascular Morbidity
• Transplant conferences
2. Maintain an outside reading program
3. Participate actively in Journal Club
4. Prepare a clinical subject for presentation or publication
5. Participate in the in-house call schedule
6. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
7. Contact senior house officers or attending surgeons when appropriate
8. Work with senior residents and attending surgeons as a team
9. Arrive in the operating room well read about the patient’s cancer, the planned surgical strategy, and the expected outcome of the procedure
PGY 1 ROTATION: CONGESTIVE HEART FAILURE AND HEART TRANSPLANT

Educational Goals
At the completion of this rotation, the resident will:
• learn the etiologies of congestive heart failure
• understand the basic medical management of heart failure
• understand the preoperative, perioperative and post operative principles of heart transplantation
• understand the role of mechanical circulatory support in heart failure therapy

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. actively participate in daily ward rounds
2. commit to writing daily progress notes
3. perform appropriately specific history and physical examinations for new inpatients and returning clinic patients
4. dictate and sign discharge summaries promptly
5. develop patient-specific treatment plans
6. use appropriate drugs in correct doses for medical management of heart failure
7. regularly attend and participate in transplant selection committee meetings
8. understand and participate in the work up for heart transplantation
9. interpret and use pulmonary artery catheter data

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the difference between systolic and diastolic heart failure
2. the medical causes of heart failure
3. the causes of myocarditis and treatment modalities
4. the appropriate medical regimen and strategies for treatment of systolic and diastolic heart failure
5. how to differentiate between HOCM and HCM and their treatments
6. how to differentiate restrictive versus constrictive physiology
7. how to interpret right heart cath data, calculate pulmonary vascular resistance, and understand its implications
8. the differences between various inotropic agents
9. the differences between the various pressor agents
10. the UNOS transplant patient classification system
11. the various available ventricular assist devices
12. the indications for left, right and biventricular support
13. the indications for automatic implanted cardiac defibrillator placement and biventricular pacing

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. effectively teach students, junior residents, and colleagues
2. present patients for discussion during rounds and seminars, with appropriate literature references to support planned interventions
3. analyze published studies for accuracy of study design and for the use or misuse of statistical analysis
4. describe factors critical to decision making:
   • risk:benefit ratio
   • morbidity and mortality probability
   • preoperative and postoperative assessment
5. use information systems to obtain pertinent information about surgical problems

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. provide information to patients using effective explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. respectful and compassionate with patients and colleagues
2. responsive to the needs of patients and society, effacing self-interest
3. accountable to patients, society, and the profession of surgery
4. committed to excellence and on-going professional development
5. wear appropriate attire at all times
6. committed to ethical principles regarding offering or withholding clinical care
7. able to obtain appropriately informed consent for planned interventions
8. committed to confidentiality of patient information
9. sensitive and responsive to patients' culture, age, gender, and disabilities
10. punctual for service activities, including conferences and patient care responsibilities
11. respond to pages and requests for assistance in a timely manner
12. be appropriately attired at all times

System-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. demonstrate awareness of the costs associated with providing care to patients
3. practice cost-effective health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
4. practice cost-effective health care that does not comprise patient care
5. discuss the responsibility of the surgeon in managing indigent patients
6. direct patients and their families to individuals within the institution who can help them to understand complex issues of societal support and resources
7. discuss the role of health care managers and surgeon-extenders in surgery
8. advocate for high quality surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   • CT Surgery Tuesday morning conferences
• CT Surgery Morbidity and Mortality Conferences
• CT Surgery Journal Club
• Heart & Vascular Morbidity and Mortality Conference
• Heart Transplant Selection Committee
2. Maintain an outside reading program
3. Participate actively in Journal Club
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
PGY 1 ROTATION: GASTROINTESTINAL SURGERY

Educational Goals
At the completion of this rotation, the resident will:
• competently evaluate patients for gastrointestinal disease
• expertly perform the preoperative assessment and postoperative care of patients undergoing major intra-abdominal procedures
• understand the fundamental principles of the surgical management of gastrointestinal disorders
• understand the principles of the surgical management of obesity

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. demonstrate confidence in basic techniques including:
   • excision of small subcutaneous lesions
   • central venous access procedure
   • knot tying
   • incision and drainage of subcutaneous abscess
   • suture closure of wound
   • insertions of nasogastric tube
2. perform and document the preoperative assessment of postoperative care of surgical patients
3. evaluate or review the evaluation of all consults of referred patients who are scheduled to undergo gastrointestinal operation
4. perform exploratory laparotomy for acute abdominal conditions requiring operation
5. demonstrate the appropriate incisions and exposures of:
   • stomach
   • pancreas
   • duodenum
   • colon
   • appendix
   • rectum
   • spleen
   • liver and gall bladder
   • esophageal hiatus
   • inguinal region
6. perform esophagogastroscopies, colonoscopies, and proctoscopies
7. diagnose and manage complications such as:
   • anastomotic leaks
   • infections
   • hematomas
   • wound dehiscence and evisceration
8. perform laparoscopic appendectomy
9. perform diagnostic laparoscopy with adhesiolysis and liver biopsies

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the differential diagnosis of the acute abdomen
2. the regional anatomy of the inguinal hernia
3. the differential diagnosis, work-up, and management of:
   - acute appendicitis
   - diverticulitis
   - hemorrhoids
   - abdominal wall hernias
   - inflammatory bowel disease
   - lower GI bleeding
   - fistulas
   - pilonidal cysts
   - upper GI bleeding
   - bowel obstruction
4. the basic fluid and electrolyte management of surgical patients
5. the principles of the nutritional management of the surgical patient with enteral and parenteral nutrition
6. the uses of the following radiological studies in the evaluation of abdominal disorders:
   - radiographs
   - ultrasound
   - computed tomography scans
   - magnetic resonance imaging scans
   - nuclear medicine scans

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
   - develop a method to record and track over time the results of intervention performed by the resident
   - be involved in the teaching of students and more junior residents and colleagues
   - present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention
   - understand the role of study design and the use/misuse of statistical analysis in review the results published research in this surgical field
   - demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
   - use information technology to manage and provide patient-related information

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
   - create and sustain a therapeutic and ethically sound relationship with patients and their families
   - listen effectively
   - inform patients using effective nonverbal, explanatory, questioning, and writing techniques
   - work effectively with other members of the health care team
   - accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   • ethical principles pertaining to provision of or withholding of clinical care
   • maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

**Systems-based Practice**
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
3. practice cost-effective health care that does not compromise patient care
4. use generic drugs appropriately
5. demonstrate understanding of clinical practice management and human resource issues, and participate in evaluating ct team members through attendance at ct division meetings
6. discuss the responsibility of the surgeon in managing indigent patients
7. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
8. identify cases appropriate for risk management
9. describe the role of health care managers and surgeon-extenders in surgery advocate for quality patient surgical care

**Duties And Responsibilities**
1. Attend all teaching functions, including:
   • CT Surgery Tuesday morning conferences
   • CT Surgery Morbidity and Mortality conferences
   • CT Surgery Journal Club
   • Digestive Disease Center Conference
   • Surgical Mortality and Morbidity Conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Provide care to inpatient on GI Surgery Service, as directed by senior GI Surgery residents GI Surgery attendings
9. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
PGY 1 ROTATION: VASCULAR SURGERY

Educational Goals
At the completion of this rotation, the resident will:
• evaluate patients for vascular disease
• perform the preoperative assessment and postoperative care of patients undergoing major vascular procedures.
• understand the fundamental principles of the management of chronic and acute arterial and venous disease

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. evaluate patients for vascular disease
2. demonstrate competence in basic surgical techniques, including:
   • knot-tying
   • exposure and retraction
3. participate in amputations with specific attention to demarcation levels
4. demonstrate proficiency in venous access procedures
5. perform preoperative assessment and postoperative care of patients undergoing major vascular procedures

Medical Knowledge
At the completion of this rotation, the resident will know:
1. human arterial and venous anatomy and related regional anatomy
2. basic arterial and venous hemodynamics
3. the anatomy, pathology, and pathophysiology of the arterial wall
4. how to assess patients’ vascular systems using appropriate skills in history-taking and clinical exam
5. how to recognize life-threatening signs of vascular disease and indicate when immediate intervention is required
6. the differentiation between the following diagnostic tools and the relative contribution of each:
   • computed axial tomographic scanning
   • magnetic resonance imaging
   • ultrasound
   • angiography
7. the pathophysiology, clinical manifestations, and therapeutic options of specific categories of vascular disease, such as:
   • venous disease
   • pulmonary embolism
   • arterial disease
   • thromboembolic disease
   • atherosclerosis and related disorders
   • aneurysmal disease
8. the interaction of cardiovascular and pulmonary systems
9. the basic principles of Doppler ultrasound for performing bedside arterial and venous Doppler testing
10. the principles of noninvasive laboratory diagnosis, including the role and limitations of the vascular laboratory:
   • ABI and waveforms
   • carotid duplex
   • venous duplex
   • PPG / LRR venous graft flow studies
11. the principles of care for ischemic limbs
12. the principles for preoperative assessment and postoperative care of patients undergoing major vascular surgical procedures
13. the fundamental elements of nonoperative care of the vascular patient, including the role of risk assessment and preventative measures
14. the hemodynamics and pathophysiology of specific clinical symptoms:
   • claudication
   • stroke
   • angina pectoris
   • transient ischemic attack
   • renovascular hypertension
   • arteriovenous fistula
   • mesenteric angina
15. the concept of critical arterial stenosis
16. the differential between acute arterial and acute deep venous occlusion
17. how to develop a plan for assessment of operative risk in these categories:
   • cardiac
   • pulmonary
   • renal
   • anesthetic risk levels
   • metabolic
18. the use of adjunctive measures such as:
   • antibiotics
   • anticoagulants
   • antplatelet agents
   • thrombolytic agents
19. the physiologic and organic manifestations of vascular disease, such as renovascular hypertension, portal hypertension, and renal failure

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. develop and use a method to record and track over time the results of interventions performed by the resident
2. effectively teach students and colleagues
3. present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention
4. analyze a study’s design and use or misuse of statistics in published papers
5. use information systems to acquire pertinent information regarding surgical problems

Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families

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2. listen effectively
3. provide information to patients using effective explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. respectful and compassionate with patients and colleagues
2. responsive to the needs of patients and society, effacing self-interest
3. accountable to patients, society, and the profession of surgery
4. committed to excellence and on-going professional development
5. wear appropriate attire at all times
6. committed to ethical principles regarding offering or withholding clinical care
7. able to obtain appropriately informed consent for planned interventions
8. committed to confidentiality of patient information
9. sensitive and responsive to patients’ culture, age, gender, and disabilities
10. punctual for service activities, including conferences and patient care responsibilities
11. respond to pages and requests for assistance in a timely manner

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe critical factors for decision making in vascular surgery
   - risk:reward ratio
   - morbidity and mortality probability
   - preoperative and postoperative assessment
   - noninvasive laboratories, duplex scanning
   - role of advanced radiologic techniques: angioplasty, computed tomography scanning, MRI and MRA imaging
2. practice cost-effective health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
3. practice cost-effective health care that does not comprise patient care
4. discuss the responsibility of the surgeon in managing indigent patients
5. advocate for high quality surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   - CT Surgery Tuesday morning conferences
   - CT Surgery Morbidity and Mortality conferences
   - CT Surgery Journal Club
   - Heart & Vascular Morbidity and Mortality conference
   - Surgical Mortality and Morbidity Conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
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<td><strong>8.</strong></td>
<td>Arrive in the operating room well read about the patient’s cancer, the planned surgical strategy, and the expected outcome of the procedure</td>
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<td><strong>9.</strong></td>
<td>Dictate all operative notes promptly</td>
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<td><strong>10.</strong></td>
<td>Use the computerized patient record system (CPRS), which includes electronic H&amp;Ps, electronic orders, and progress notes</td>
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<td><strong>11.</strong></td>
<td>Complete all workups of patients for ambulatory surgery</td>
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Educational Goals
At the completion of this rotation, the resident will:
• accurately and efficiently evaluate patients for cardiac and thoracic diseases
• effectively perform preoperative assessment and postoperative ward care of patients undergoing major general cardiac and thoracic procedures
• understand the fundamental principles of the surgical management of cardiac, thoracic, and vascular diseases

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. Demonstrate competence in basic techniques such as:
   • venous access
   • exposure and retraction, lighting, tissue handling
   • thoracentesis and chest tube insertion
   • suturing wounds
   • knot-tying
2. perform and document preoperative assessment and postoperative care of surgical patients, including managing common arrhythmias and hyper- and hypotension, and medical optimization of coronary artery disease
3. evaluate patients for thoracic and cardiac surgery, including preoperative assessment and postoperative care of patients undergoing major procedures
4. harvest saphenous veins

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the anatomy and vasculature of the thorax
2. the differential diagnosis, workup, and management of:
   • angina
   • pulmonary nodule
   • abdominal pain
   • chest wall mass
   • mediastinal mass
   • abdominal distention
   • dysphagia
   • cervical bruit
   • wound drainage
   • GERD
   • dyspnea
   • achalasia
   • cardiac murmur & valvular pathology
   • sternal click / instability
3. the fundamental elements of non-operative care of the cardiothoracic surgical patient
4. the fundamental elements of intensive care of cardiothoracic surgical patients
• ventilator management
• antibiotics
• hyperalimentation
• fluid management
• sepsis
• central line monitoring
• medications
5. the role of the following radiologic studies in the assessment of cardiothoracic patients:
   • radiographs
   • CT scan
   • viability study
   • PET scan
   • exercise stress test
   • echocardiography
   • endoscopic and bronchoscopic ultrasound
   • nuclear stress test
   • heart catheterization
6. human cardiac, arterial, and venous anatomy
7. basic arterial and venous hemodynamics
8. the anatomy and pathophysiology of the arterial wall
9. how to interpret pulmonary artery catheter data
10. the pathophysiology, clinical manifestations, and therapeutic options of specific categories of cardiovascular disease:
    • left main coronary artery disease
    • depressed left ventricular function
    • three vessel coronary artery disease
    • left main equivalent
    • proximal high grade LAD stenosis
11. the principles of noninvasive laboratory diagnosis, including the role and limitations of the vascular laboratory:
    • ABI / waveforms
    • carotid duplex
12. the principles of care for ischemic limbs
13. formulate a plan for assessment of operative risk in these categories:
    • vascular
    • pulmonary
    • renal
    • metabolic
    • anesthesia

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. develop and use a method to record and track over time the results of interventions performed by the resident
2. effectively teach students and colleagues
3. present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention

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4. analyze a study’s design and use or misuse of statistics in published papers
5. use information systems to acquire pertinent information regarding surgical problems
6. Analyze and utilize critical factors for decision making in cardiothoracic surgery:
   • risk:benefit ratio
   • morbidity and mortality probability
   • preoperative and postoperative assessment

Interpersonal and Communications Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. provide information to patients using effective explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. respectful and compassionate with patients and colleagues
2. responsive to the needs of patients and society, effacing self-interest
3. accountable to patients, society, and the profession of surgery
4. committed to excellence and on-going professional development
5. committed to ethical principles regarding offering or withholding clinical care
6. able to obtain appropriately informed consent for planned interventions
7. committed to confidentiality of patient information
8. sensitive and responsive to patients’ culture, age, gender, and disabilities
9. punctual for service activities, including conferences and patient care responsibilities
10. responsive to pages and requests for assistance in a timely manner
11. appropriately attired at all times

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. demonstrate awareness of the costs associated with providing care to patients
3. practice cost-effective health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
4. practice cost-effective health care that does not comprise patient care
5. discuss the responsibility of the surgeon in managing indigent patients
6. direct patients and their families to individuals within the institution who can help them to understand complex issues of societal support and resources
7. discuss the role of health care managers and surgeon-extenders in surgery
8. advocate for high quality surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   • CT Surgery Tuesday morning conferences
   • CT Surgery Morbidity and Mortality conferences
   • CT Surgery Journal Club
   • Heart & Vascular Morbidity and Mortality conference
- VA Surgical Conference
- VA Vascular Conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s cancer, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
POST GRADUATE YEAR 2

PGY 2 ROTATION: MUSC VEIN HARVEST AND PERFUSION TECHNOLOGY AND CT ANESTHESIA

Educational Goals
At the completion of this rotation, the resident will:
1. understand various techniques for saphenous vein and radial artery harvest and appropriate use of each conduit
2. understand the basics of cardiopulmonary bypass
3. understand the physiologic changes associated with induction, maintenance, and emergence from anesthesia
4. understand the basic pharmacology of anesthetic drugs and their interactions
5. independently perform endotracheal intubation and insert central venous lines
6. have a basic understanding of transesophageal echocardiography

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. prepare excellent grafts while doing open vein graft harvesting
2. manage difficult vein harvesting situations competently
3. understand and observe harvest vein graft using endoscopic techniques
4. understand harvest of radial arteries
5. prepare cardiac and general thoracic patients prior to skin incision, including proper positioning, prepping, and appropriate line placement
6. perform bronchoscopy and upper GI endoscopy in the patient under general anesthesia
7. describe aspects of cardiopulmonary bypass, such as:
   a. the circuit and its various parts
   b. cannulation techniques, and sites with the benefits of each
   c. the differences in various pump types and benefits of each
   d. blood conservation techniques and their risks and benefits
   e. the process of instituting and separating from cardiopulmonary bypass
   f. antifibrinolytics agents and their appropriate selection
   g. profound hypothermic circulatory arrest
   h. perfusion for thoracic aortic surgery including left heart bypass
   i. extracorporeal membrane oxygenation and the various options for cannulation
8. explain intraaortic balloon pump insertion and operation of the console
9. describe ventricular assist devices: structure, function, and indications for use
10. prepare proper admission orders to the ICU postoperative orders
11. participate in proper handoff to the ICU team caring for the patients
12. secure and maintain an airway without endotracheal tube placement
13. properly place an endotracheal tube
14. insert intravenous and arterial lines in a sterile manner
15. administer conscious sedation appropriately
16. administer and manage general anesthesia in a healthy patient under the direct supervision of an attending anesthesiologist

Medical Knowledge
At the completion of this rotation, the resident will know:
1. pertinent literature regarding types of bypass conduits and their best preparation techniques
2. the history of cardiopulmonary bypass in the context of cardiac surgery
3. the mechanism of action, risks and benefits of antifibrinolytic agents
4. the different methods of pH management for cardiopulmonary bypass
5. the mechanisms of and adjuncts to cerebral protection for hypothermic circulatory arrest
6. the various mechanisms of spinal protection for thoracic aortic surgery
7. the difference between cardiopulmonary bypass and left heart bypass, and the possible uses, risks and benefits of both
8. the principle of intraaortic balloon counter pulsation and appropriate balloon timing
9. the various types of extracorporeal membrane oxygenation
10. similarities and differences between extracorporeal membrane oxygenation and other types of cardiopulmonary bypass
11. basic concepts of ventricular assist devices and the physiologic differences from cardiopulmonary bypass
12. the physiologic changes associated with induction and maintenance of general anesthesia
13. how to manage emergence from anesthesia
14. the basic pharmacology of the major inhalational and parenteral anesthetic agents, including interaction with other medications

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. develop and use a method to record and track over time the results of interventions performed by the resident
2. effectively teach students and colleagues
3. analyze a study’s design and use or misuse of statistics in published papers
4. use information systems to acquire pertinent information regarding surgical problems
5. recount relevant content of current issues of Annals of Thoracic Surgery and Journal of Thoracic Surgery at cardiothoracic journal club
6. present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention

Interpersonal and Communications Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. provide information to patients using clear explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. working closely and collegially with anesthesia and OR nursing staff
2. respectful and compassionate with patients and colleagues
3. responsive to the needs of patients and society, effacing self-interest
4. accountable to patients, society, and the profession of surgery
5. committed to excellence and on-going professional development
6. wear appropriate attire at all times
7. committed to ethical principles regarding offering or withholding clinical care
8. able to obtain appropriately informed consent for planned interventions
9. committed to confidentiality of patient information

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Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the process of restocking perfusion supplies
2. discuss the approximate cost of the cardiopulmonary bypass circuit and its various parts and implications of priming the pump
3. practice cost-effective health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
4. practice cost-effective health care that does not comprise patient care
5. discuss the role of health care managers and surgeon-extenders in surgery
6. advocate for high quality surgical care
7. describe the role of a tertiary referral center in the surgical management of simple and complex problems
8. demonstrate awareness of the costs associated with providing care to patients
9. practice cost-effective health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
10. practice cost-effective health care that does not comprise patient care
11. discuss the responsibility of anesthesiologists in managing indigent patients
12. advocate for high quality anesthesia care

Duties and Responsibilities
1. Attend all teaching functions including:
   a. CT Surgery Tuesday morning conferences
   b. CT Surgery weekly Mortality and Morbidity Conference
   c. CT Surgery Journal Club
   d. Heart and Vascular Mortality and Morbidity Conference
   e. Department of Anesthesiology conferences
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents, anesthetists, anesthesiology residents and attending surgeons and anesthesiologists as a team
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
13. Assist in the placement of central lines
PGY 2 ROTATION: VASCULAR SURGERY

Educational Goals
At the completion of this rotation, the resident will:
1. evaluate patients for vascular disease
2. perform the preoperative assessment and postoperative care of patients undergoing major vascular procedures
3. understand the fundamental principles of the management of chronic and acute arterial and venous disease

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. perform preoperative assessment and postoperative care of patients undergoing major vascular procedures
2. demonstrate competence in basic surgical techniques, including:
   a. knot-tying
   b. exposure and retraction
   c. making incisions
   d. knowledge of instrumentation
   e. closing incisions
   f. handling graft material
3. control toxicity associated with gangrene
4. perform amputations with specific attention to demarcation levels
5. demonstrate proficiency in venous access procedures
6. manage venous disease, including:
   a. performing ligation and stripping of varicose veins
   b. managing venous stasis ulcers
   c. managing venous thrombosis
   d. perform arterial access or arterio-venous access, including:
      e. making incisions
      f. closing incisions
      g. thrombectomy

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the basic clinical manifestations of the following vascular disorders:
   a. arterial and venous thromboembolic disease
   b. chronic venous insufficiency and lymphatic obstruction
   c. portal hypertension
2. the differences between the diagnostic tools available for assessing vascular disease and the relative contributions of each:
   a. magnetic resonance imaging and magnetic resonance angiography
   b. duplex scanning and ultrasonography
3. the etiology, pathophysiology, and therapeutic options of specific categories of vascular disease:
   a. venous disease
      a. post-phlebitic
      b. varicose vein disease
      c. portal hypertension
   b. lymphatic disease
      a. operative procedures for correction of lymphatic disease

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b. congenital lymphatic anomalies
c. anatomy of lymphatic system and lymphatic return
d. acquired lymphatic disease
c. arterial disease
   a. arterial embolic disease
   b. degenerative arterial disease
   c. extracranial cerebrovascular disease
d. aortic and other vascular aneurysms
e. visceral ischemic syndromes
f. atherosclerotic vascular disease
g. renovascular hypertension
d. trauma
e. arteriovenous fistulas

4. the natural history of medically-treated vascular disease in the following categories:
   a. carotid arterial stenosis
   b. abdominal aortic aneurysm
c. chronic femoral artery occlusion

5. the role of anticoagulant agents, including antiplatelet agents, in the management of patients with vascular disease
6. the role of the endothelium in atherosclerosis, thrombosis, and thrombolysis
7. the principles of and contraindications for anticoagulation and thrombolytic therapy
8. surgically correctable causes of hypertension and their diagnostic modalities
9. mechanisms of action and therapeutic role of the following types of agents:
   a. vasopressors
   b. adrenergic blocking agents
c. vasodilators
d. antiplatelet agents
e. anticoagulants
f. thrombolytics

10. general principles of vascular surgical technique, including:
    a. endarterectomy
    b. vascular control and suturing
c. angioplasty
d. bypass grafting

11. how clotting factors interact, including hypercoagulable states and coagulopathies
12. the role of the following factors in maintaining homeostasis in the coagulation pathways:
    a. platelets
    b. platelet granules
c. protein S
d. endothelial cell
e. protein C
f. antithrombin III

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
6. use information technology to manage and provide patient-related information

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
4. work effectively with other members of the health care team

Professionalism
At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   a. ethical principles pertaining to provision of or withholding of clinical care
   b. maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe critical factors for decision making in vascular surgery
   a. risk:reward ratio
   b. morbidity and mortality probability
   c. preoperative and postoperative assessment
   d. noninvasive laboratories, duplex scanning
   e. role of advanced radiologic techniques: angioplasty, ct scanning, and MRI/MRA imaging
2. apply the decision making process in analyzing complex vascular diseases, including:
   a. lower extremity arterial occlusion
   b. renovascular disease
   c. mesenteric vascular disease
   d. aneurysmal disease
   e. cerebrovascular problems
   f. venous disease
3. describe the role of a tertiary referral center in the surgical management of simple and complex problems
4. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
5. practice cost-effective health care that does not compromise patient care
6. discuss the responsibility of the surgeon in managing indigent patients
7. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
8. describe the role of health care managers and surgeon-extenders in surgery
9. advocate for quality patient surgical care
10. explain the risk:reward ratios of surgical care for patients with vascular disease
11. demonstrate awareness of the costs associated with providing surgical care to patients with vascular disorders
Duties and Responsibilities

1. Attend all teaching functions, including:
   a. CT Surgery Tuesday morning conferences
   b. CT Surgery Morbidity and Mortality conferences
   c. CT Surgery Journal Club
   d. Heart & Vascular Mortality and Morbidity Conference
   e. Surgery Morbidity and Mortality conferences

2. Maintain an outside reading program

3. Prepare a clinical subject for presentation or publication

4. Participate in the in-house call schedule

5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy

6. Contact senior house officers or attending surgeons when appropriate

7. Work with senior residents and attending surgeons as a team

8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure

9. Sign all verbal orders within 24 hours

10. Dictate all operative notes promptly

11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes

12. Complete all workups of patients for ambulatory surgery
PGY 2 ROTATION: VETERANS ADMINISTRATION HOSPITAL CARDIOTHORACIC SURGERY

Educational Goals
At the completion of this rotation, the resident will:

• thoroughly and accurately evaluate patients for cardiac, thoracic, and vascular diseases
• perform preoperative assessment and postoperative ward care of patients undergoing major cardiac and general thoracic procedures
• know the fundamental principles of the surgical management of cardiac and thoracic diseases

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:

1. demonstrate competence in basic techniques such as:
   • suture closure of wounds
   • exposure, retraction, lighting, tissue handling
   • venous access procedures
   • knot tying
   • thoracentesis and chest tube insertion
2. evaluate and document preoperative assessment and postoperative care, including managing:
   • common arrhythmias
   • medical optimization of CAD
   • hypertension
   • hypotension
3. participate in saphenous vein harvest
4. describe the risk factors for cardiac and thoracic surgery
5. appropriately work up the preoperative patient based on patient risk factors
6. interpret chest x-rays, CT scans of the thorax, PET scans, left heart catheterization films, echocardiograms, and nuclear stress tests
7. describe the treatment algorithm for symptomatic and asymptomatic carotid stenosis
8. discuss the selection process for:
   • extent of pulmonary resection
   • conduit
   • approach for esophagectomy
   • valve type
   • extent of mediastinal lymph node dissection
9. perform a median sternotomy and posterolateral thoracotomy
10. close a median sternotomy and a posterolateral thoracotomy
11. perform wedge resection and pleurodesis
12. appropriately place and locate VATS port sites
13. place a chest tube in an anesthetized and a conscious patient
14. demonstrate basic wire skills associated with pacemaker insertion
15. manage routine cardiac and thoracic patients in the ICU
16. recognize signs and symptoms of common complications
17. describe the medical management of coronary artery disease
**Medical Knowledge**

At the completion of this rotation, the resident will know:

1. the anatomy and vasculature of the thorax
2. the differential diagnosis, work up and management a pulmonary nodule
3. the differential diagnosis, workup, and management of:
   - angina
   - chest wall masses
   - dysphagia
   - dyspnea
   - gastroesophageal reflux disease
   - achalasia
   - cervical bruit
   - mediastinal masses
   - wound drainage
   - cardiac murmur/valvular pathology
   - Marfan’s disease
   - abdominal pain
   - abdominal distention
   - sternal click/instability
4. the fundamental elements of non-operative care of the cardiothoracic surgical patient
5. the fundamental elements of intensive care of cardiothoracic surgical patients
   - antibiotics
   - medications
   - ventilatory management
   - central line monitoring
   - fluid management
   - hyperalimentation
   - sepsis
6. the role of the following laboratory studies in the assessment of cardiothoracic patients:
   - radiographs
   - echocardiography
   - endoscopic ultrasound
   - PET & CT scan
   - viability study
   - endobronchial ultrasound
   - exercise stress test
   - nuclear stress test
   - heart catheterization
7. human cardiac arterial and venous anatomy
8. basic arterial and venous hemodynamics
9. the anatomy and pathophysiology of the arterial wall
10. how to interpret pulmonary artery catheter data
11. the pathophysiology, clinical manifestations, and therapeutic options of specific categories of cardiovascular disease:
   - depressed left ventricular function
   - left main equiv. coronary artery disease
   - left main coronary artery disease
• proximal high grade LAD stenosis
• three-vessel coronary artery disease

12. the principles of noninvasive laboratory diagnosis, including a description of the role and limitations of the vascular laboratory:
   • ABI / waveforms
   • carotid duplex

13. the principles of care for ischemic limbs

14. how to assess operative risk in these disease categories:
   • vascular
   • pulmonary
   • renal
   • metabolic
   • levels of anesthetic risk

15. how to interpret pulmonary function tests and calculate a postoperative predicted FEV1

16. the radiologic features of malignant and benign lesions on CXR, CT and PET scans
17. the risk of stroke in preoperative patients with symptomatic and asymptomatic carotid stenosis
18. the implications of ventricular function for coronary and valve cases
19. the durability of various bypass graft conduits
20. the benefits and risks of various forms of treatment for coronary artery disease
21. early and current literature regarding coronary artery bypass compared to medical management and percutaneous interventions
22. current lung and esophageal cancer staging systems
23. options for postoperative analgesia in cardiac and thoracic patients and their respective risks and benefits
24. long term followup results of surgically treated cardiac and thoracic patients

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. develop and use a method to record and track over time the results of interventions performed by the resident
2. effectively teach students and colleagues
3. present patients during rounds and seminars, with appropriate literature references to support planned interventions
4. analyze a study’s design and use or misuse of statistics in published papers
5. use information systems to acquire pertinent information regarding surgical problems

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. provide information to patients using effective explanation, questions, writing, and other nonverbal techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be:
1. respectful and compassionate with patients and colleagues
2. responsive to the needs of patients and society, effacing self-interest
3. accountable to patients, society, and the profession of surgery
4. committed to excellence and on-going professional development
5. wear appropriate attire at all times
6. committed to ethical principles regarding offering or withholding clinical care
7. able to obtain appropriately informed consent for planned interventions
8. committed to confidentiality of patient information
9. sensitive and responsive to patients’ culture, age, gender, and disabilities
10. punctual for service activities, including conferences and patient care responsibilities
11. responsive to pages and requests for assistance in a timely manner

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. demonstrate awareness of the costs associated with providing care to patients
3. practice cost-effective health care and resource allocation, specifically, reducing the use of unnecessary preoperative and postoperative screening and testing
4. practice cost-effective health care that does not comprise patient care
5. discuss the responsibility of the surgeon in managing indigent patients
6. direct patients and their families to individuals within the institution who can help them to understand complex issues of societal support and resources
7. discuss the role of health care managers and surgeon-extenders in surgery
8. advocate for high quality surgical care

Duties and Responsibilities
1. Respond to urgent or emergent problems in a prompt manner
2. Attend the outpatient clinics
3. Participate in the in-house call rotation
4. Sign all verbal orders within 24 hours
5. Do all dictations promptly.
6. Learn how to use the computerized patient record system (CPRS) which includes electronic H&Ps, electronic orders, consent and progress notes
7. Attend the following conferences:
   • cardiothoracic core curriculum conference
   • cardiothoracic M and M Conference
   • basic science lecture
   • VA Surgical conference
   • CT Surgery Journal Club, monthly
8. Attend work rounds twice daily
9. Write orders and complete all assigned tasks
10. Co-sign or write progress notes daily
11. Complete the work-up of patients for ambulatory surgery
12. Work up all admissions to the inpatient ward
13. Notify the senior resident or attending staff of any problems

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PGY 2 ROTATION: MUSC CARDIOThorACIC INTENSIVE CARE UNIT

Educational Goals
At the completion of this rotation, the resident will:
• treat and manage most postoperative complications
• accurately manage low cardiac output syndrome
• understand and use with facility various cardiac support devices, including ventricular assist devices

Educational Objectives
Patient Care
At the completion of this rotation, the resident will be able to:
1. describe routine management after CABG and valve surgery
2. utilize tools for management of low cardiac output
3. manage and implement IABP care
4. manage patients on ECMO, LVAD and RVAD support
5. manage the ventilated patient proficiently
6. discuss the routine management and goals of the post operative thoracic surgical patient
7. place with facility central lines, Swan Ganz catheters, arterial lines, IABP catheters and chest tubes

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the physiologic changes after cardiac or thoracic surgery
2. the physiologic changes and appropriate treatment for sepsis
3. the possible complications after cardiac or thoracic surgical procedures

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems

Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
1. successfully participate in team care of the cardiac and general thoracic patient
2. complete proper transfer of care when signing out and covering other physician’s patients
3. complete proper request for consultation from other services
4. appropriately apprise senior members of team of important changes in patient status
5. develop a close working relationship with nurses and other health care professionals in the critical care environment
**Professionalism**
At the completion of this rotation, the resident will be able to:
1. demonstrate a working knowledge of HIPAA laws
2. communicate effectively and compassionately with patients and families
3. demonstrate punctuality
4. answer pages and requests for assistance promptly and pleasantly
5. exhibit appropriate attire at all times
6. prepare transfer orders
7. prepare clear and complete progress notes daily and more often whenever clinical status changes

**Systems-based Practice**
At the completion of this rotation, the resident will be able to:
1. perform efficient, timely and cost effective practice patterns
2. use intensive invasive monitoring as appropriate to patient needs
3. describe the role of a tertiary referral center in the surgical management of simple and complex problems
4. practice cost-effective health care that does not compromise patient care
5. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources

**Duties and Responsibilities**
1. Attend all teaching functions, including:
   - CT Surgery Tuesday morning conferences
   - CT Surgery Mortality and Morbidity Conference
   - CT Surgery Journal Club
   - Heart & Vascular Mortality and Morbidity Conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care unit staffs, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Sign all verbal orders within 24 hours
9. Dictate all procedure notes promptly
10. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
PGY2 ROTATION: GASTROINTESTINAL SURGERY

EDUCATIONAL GOALS

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

1. Evaluate patients for gastrointestinal disease.
2. Perform the preoperative assessment and postoperative care of patients undergoing major intra-abdominal procedures.
3. Understand the fundamental principles of the surgical management of gastrointestinal disorders.
4. Understand the principles of the surgical management of obesity.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Demonstrate confidence in basic techniques including:
   a. incision and drainage of subcutaneous abscess
   b. excision of small subcutaneous lesions
   c. knot tying
   d. suture closure of wound
   e. central venous access procedure
   f. insertion of nasogastric tube
2. Perform and document the preoperative assessment of postoperative care of surgical patients.
3. Evaluate or review the evaluation of all consults of referred patients who are scheduled to undergo gastrointestinal operation.
4. Perform exploratory laparotomy for acute abdominal conditions requiring operation.
5. Demonstrate the appropriate incisions and exposures of:
   a. esophageal hiatus
   b. stomach
   c. pancreas
   d. duodenum
   e. colon
   f. liver and gallbladder
   g. appendix
   h. rectum
   i. spleen
   j. inguinal region
6. Perform esophagogastroduodenoscopies, colonoscopies, and proctoscopies.
7. Perform bowel resections with staple and hand-sewn anastomosis.
8. Diagnose and manage complications such as:
   a. anastomotic leaks
   b. infections
   c. hematomas
   d. wound dehiscence and evisceration
9. Perform laparoscopic cholecystectomy with intraoperative cholangiogram
10. Perform laparoscopic appendectomy
11. Perform diagnostic laparoscopy with adhesiolysis and liver biopsies

**Medical Knowledge**

1. Provide the differential diagnosis of the acute abdomen.
2. Describe the regional anatomy of inguinal hernia.
3. Describe the differential diagnosis, work-up, and management of:
   a. abdominal wall hernias
   b. acute appendicitis
   c. inflammatory bowel disease
   d. diverticulitis
   e. upper GI bleeding
   f. lower GI bleeding
   g. anal/rectal disorders
      i. hemorrhoids
      ii. fistulas
      iii. pilonidal cysts
   h. bowel obstruction
4. Outline the basic fluid and electrolyte management of surgical patients.
5. Outline the principles of the nutritional management of the surgical patient with enteral and parenteral nutrition.
6. Explain the use of the following radiologic studies in the evaluation of abdominal disorders:
   a. radiographs
   b. ultrasound
   c. CT scan
   d. MRI scan
   e. nuclear medicine scan
7. Describe the work-up, treatment options, and surgical approach to:
   a. esophageal dysmotility and gastroesophageal reflux
   b. peptic ulcer disease
   c. acute pancreatitis, pancreatic pseudocysts, chronic pancreatitis
   d. extrahepatic biliary obstruction
   e. cholecystitis and cholelithiasis
   f. small and large bowel obstruction
   g. sphincter preservation for inflammatory bowel disease
   h. short bowel syndrome
   i. small bowel fistulas
   j. morbid obesity

**Interpersonal Communication Skills**

In patients undergoing gastrointestinal surgery:
1. Be able to create and sustain a therapeutic and ethically sound relationship with patients and their families
2. Use effective listening skills.
3. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques.
4. Work effectively with other members of the health care team.
5. Be prepared to describe an acceptable method to handle the following example interactions:
   a. patient with chronic pancreatitis demands pain medicines, threatens to call lawyer
      because you prefer not to prescribe narcotics
   b. oncology service physician demands that you perform a percutaneous endoscopic
      gastrostomy in a patient with end-stage disease, DNR status, expected to live no
      more than one or two months, in order that patient can be managed in a nursing
      home out of the hospital

**Professionalism**

While caring for patients undergoing gastrointestinal surgery:
1. Demonstrate respect, compassion, and integrity.
2. Demonstrate responsiveness to the needs of patients and society and supercedes self-interest.
3. Demonstrate accountability to patients, society, and the profession of surgery.
4. Demonstrate a commitment to excellence and on-going professional development.
5. Demonstrate a commitment to ethical principles pertaining to provision of or withholding
   of clinical care.
7. Be able to obtain informed consent for planned interventions.
8. Demonstrate sensitivity and responsiveness to patient’s culture, age, gender, and disabilities.
9. Be prepared to discuss the professional and ethical principles with respect to the
    following example situations:
    a. indigent patient with no hope for funding wishes to have temporary colostomy
       taken down, but no way to pay for it
    b. opportunity to operate (cholecystectomy, colectomy) one day per week in a rural
       hospital 80 miles from your practice, with family practice physician willing to
       provide postoperative care

**Practice-based Learning**

For patients undergoing gastrointestinal surgery:
1. Develop a method to record and track over time the results of intervention performed by
   the resident.
2. Be involved in the teaching of students and more junior residents and colleagues.
3. Present patients for discussion during rounds and seminars, with appropriate literature
   references to support planned intervention.
4. Understand the role of study design and the use/misuse of statistical analysis in review
   the results of published research in this surgical field.
5. Demonstrate the ability to use information systems to obtain pertinent information
   regarding surgical issues and problems.
6. Use information technology to manage and provide patient-related information.
7. Be prepared to describe how to obtain relevant information to support patient management in the following example situations:
   a. confronted with common duct stones during laparoscopic cholecystectomy, whether to perform laparoscopic vs open common duct exploration vs postoperative ERCP and sphincterotomy
   b. perioperative morbidity/mortality risk of laparoscopic cholecystectomy in a patient with class B cirrhosis

**Systems-based Practice**

For patients undergoing gastrointestinal surgery:
1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effective health care that does not compromise patient care.
4. Understand the responsibility of the surgeon in managing indigent patients.
5. Direct patients and their families towards individuals within the Institution that can help them with understanding complex issues of societal support and resources.
6. Understand an awareness of the role of health care managers and surgeon-extenders in the surgical management of patients.
8. Demonstrate awareness of the costs associated with providing care to patients.
9. Be prepared to discuss the interplay of the competing societal and patient needs in the following example situations:
   a. investing $20,000 of health care resources to perform gastric bypass for obesity inpatient
   b. performing anti-reflux surgery vs life-long treatment with proton pump inhibitors for symptomatic gastroesophageal reflux

**Duties and Responsibilities**

1. Attend all teaching functions, including:
   a. CT Surgery Tuesday morning conferences
   b. CT Surgery Morbidity and Mortality conferences
   c. CT Surgery Journal Club
   d. Heart and Vascular Morbidity and Mortality Conferences
   e. Surgery Morbidity and Mortality Conferences
2. Maintain an outside reading program.
3. Prepare a clinical subject for presentation or publication.
4. Participate in the in-house call schedule.
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy.
6. Contact senior house officers or attending surgeons when appropriate.
7. Work with senior residents and attending surgeons as a team.
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure.
9. Sign all verbal orders within 24 hours.
10. Dictate all operative notes promptly.
PGY 2 ROTATION: CONGENITAL CARDIOTHORACIC SURGERY

Educational Goals
At the completion of this rotation, the resident will:
• have acquired knowledge of a broad range of congenital heart defects
• provide preoperative and postoperative assessment and care for patients undergoing congenital heart operations
• participate in straightforward procedures in congenital heart patients

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. demonstrate technical ability in routine perioperative procedures, including chest tube placement/removal, intracardiac catheter removal, urinary catheter insertion, and pacing wire removal
2. assist and actively participate in appropriate postoperative management of children who have undergone congenital cardiac surgery, including appropriate ventilator, pharmacological, and nutritional management
3. recognize and respond appropriately to unexpected urgent patient needs in a timely manner

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the physiology, presentation and evaluation of common congenital heart defects
2. the function, construction and operation of a cardiopulmonary bypass machine
3. current surgical management of 1- and 2-ventricle congenital heart repairs
4. current surgical issues through attendance at weekly combined pediatric cardiology/cardiac surgery conferences and CT residents’ seminars

Practice Based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. demonstrate ability to practice lifelong learning by reading current issues of annals of thoracic surgery and journal of thoracic and cardiovascular surgery, focusing on congenital heart disease
2. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
3. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
4. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
5. use information technology to perform focused clinical research
6. assume graded responsibility for post-operative care
7. perform satisfactorily on in-training written and oral exams

Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
1. demonstrate skill in the communication of patient care issues with the heart team and use of sensitivity and tact during discussions with patients’ family
2. deal competently and effectively with pediatric cardiologists and other members of the patient care team

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3. create and sustain a therapeutic and ethically sound relationship with patients and their families
4. listen effectively
5. inform patients using effective nonverbal, explanatory, questioning, and writing techniques

Professionalism
At the completion of this rotation, the resident will be able to:
1. communicate effectively and compassionately with patients and their families
2. demonstrate punctuality for service activities, including conferences and patient care responsibilities
3. respond to pages and requests for assistance consistently in a timely manner
4. demonstrate patience, sensitivity, and tact in dealing with the moral, legal, and ethical issues associated with the care of pediatric cardiac surgery patient
5. demonstrate integrity and respect for all members of the patient care team
6. exhibit ethical behavior and describe the process of surrogate decision making
7. demonstrate respect, compassion, and integrity
8. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
9. wear appropriate attire at all times
10. document regular attendance at CT residents’ seminars on ethics and professionalism

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. discuss prenatal diagnosis in the care of patients with congenital heart defects
2. perform efficient, timely, and cost effective practice patterns
3. demonstrate understanding of clinical practice management and human resource issues and participate in evaluating CT team members, through attendance at CT faculty division meetings
4. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
5. describe the Children’s Heart Program of South Carolina

Duties and Responsibilities
1. Attend all teaching functions, including:
   - combined Pediatric Cardiology/Cardiac Surgery conferences
   - CT Surgery Journal Club
   - CT Surgery Mortality and Morbidity Conference
   - CT Residents’ Tuesday Morning Seminars
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Contact senior house officers or attending surgeons when appropriate
6. Work with senior residents, attending surgeons, and pediatric cardiologists as a team
7. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
8. Sign all verbal orders within 24 hours
9. Dictate all operative notes promptly
PGY 2 ROTATION: MUSC GENERAL THORACIC SURGERY

Educational Goals
During this rotation, the resident will:
1. provide excellent preoperative and postoperative assessment and care for patients undergoing major pulmonary surgical procedures
2. assess accurately patients’ pulmonary systems using appropriate skills in history taking and clinical examination
3. evaluate thoroughly patients with pulmonary disease
4. participate in the primary management and care of patients in the cardiothoracic ICU
5. assist in the management of thoracic trauma victims
6. accurately assess patients referred for consultation

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. perform workup and preoperative check of patients undergoing thoracic surgery
2. provide preoperative and postoperative assessment and care for patients undergoing major pulmonary surgical procedure
3. evaluate patients with pulmonary disease, with understanding of:
   a. common bronchodilator therapy
   b. lung cancer staging process
   c. pulmonary function tests
4. observe and assist in the operating room
5. manage routine postop drains, devices, and conditions:
   a. gastrostomy tube
   b. chest tube drainage
   c. jejunostomy tubes
   d. mediastinal drainage tubes
   e. pneumothorax and hemothorax
   f. thoracic and median sternotomy incisions
   g. insertion/removal of chest tubes
6. become familiar with basic skills used in cardiothoracic surgery
   a. removal of chest tubes
   b. insertion of chest tubes
   c. removal of thoracic drains
   d. thoracentesis
   e. endoscopy
7. improve competence in basic surgical skills
   a. knot tying
   b. closing thoracic incisions
8. demonstrate advanced critical care skills necessary for intensive care of CT patients:
   • ventilator management
   • pharmacologic management of preload, myocardial contractility, heart rate and afterload
   • recognition and management of arrhythmias
   • placement of invasive monitoring lines (arterial lines, subclavian lines, Swan-Ganz catheters, dialysis catheters, etc)
   • bronchoscopy
9. demonstrate competence in the following surgical skills:
10. assess and manage thoracic trauma patients
11. assess and summarize pertinent finding of consult patients

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the anatomy of the lungs and their relationship to adjacent structures
2. the physiology of airway mechanics, gas exchange, and blood flow
3. the diagnostic tools available for assessing pulmonary disease:
   a. CXR
   b. CT scan
   c. PET scan
   d. pulmonary function tests
   e. nuclear scans
4. the principles of preoperative assessment and postoperative care of patients undergoing major pulmonary surgical procedures
5. the pharmacology of drugs used in the treatment of routine arrhythmias
6. how to recognize potential urgent pulmonary situations:
   a. pulmonary emboli
   b. pneumonia
   c. pneumothorax
   d. arrhythmia
7. the indications for different thoracic incisions, the surgical impact
8. the indications and staging tools for lung cancer: CT scan, PET scan, EUS, EBUS, mediastinoscopy, thoracoscopy
9. the indications and interpretation of studies used to assess candidates for pulmonary resection:
   a. PFT
   b. V/Q scan
   c. VO2 max
10. the compartments of the mediastinum and diseases/tumors in each compartment
11. the complications of lung resection and their management
12. how to evaluate the pulmonary nodule and interstitial lung disease
13. the types of pleural effusions, their evaluation and treatment
14. the anatomy of the esophagus

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
6. use information technology to manage and provide patient-related information
Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
4. work effectively with other members of the health care team

Professionalism
At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   a. ethical principles pertaining to provision of or withholding of clinical care
   b. maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
3. practice cost-effective health care that does not compromise patient care
4. discuss the responsibility of the surgeon in managing indigent patients
5. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
6. describe the role of health care managers and surgeon-extenders in surgery
7. advocate for quality patient surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   a. CT Surgery Tuesday morning conferences
   b. CT Surgery Mortality and Morbidity conferences
   c. CT Surgery Journal Club
   d. Heart & Vascular Mortality and Morbidity conference
   e. Thoracic Tumor Board
   f. Thoracic Clinic - HCC
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
2. Sign all verbal orders within 24 hours
3. Dictate all operative notes promptly
4. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
5. Complete all workups of patients for ambulatory surgery
PGY 2 ROTATION: IMAGING & ECHOCARDIOGRAPHY

Educational Goals
At the completion of this rotation, the resident will:

• be able to identify normal and pathological features on a chest radiograph
• know the indications for and interpretation of computed tomography scans
• understand the basis for and interpretation of magnetic resonance imaging scans
• be familiar with echocardiographic cardiac anatomy.
• understand the principles of Doppler subsequent calculations.
• understand the appropriate indications for echocardiography.

Educational Objectives:

Patient Care
At the completion of this rotation, the resident will be able to:

1. request appropriately and interpret chest radiograms, CT, PET, and MRI scans
2. name and describe characteristics of chest pathologies that are seen infrequently in routine work but have distinctive radiographic and/or clinicopathological signs
3. correlate pathological and clinical data with radiographic findings on the chest film
4. describe appropriate patient preparation, before and after imaging procedures
5. discuss the pathophysiology, prophylaxis and treatment of contrast allergic reactions
6. describe the standard transthoracic echocardiographic exam, including identification of:
   • all major cardiac structures
   • valvular, aortic, ventricular and pericardial pathology
   • specific window or view from which an image has been obtained
7. describe the standard transesophageal echocardiographic examination, including identification of valvular, aortic, ventricular and pericardial pathology

Medical Knowledge
At the completion of this rotation, the resident will know:

• the normal anatomy of the chest as it is seen on the PA and lateral chest radiogram
• common variants of normal anatomy as seen in images
• the characteristics of common abnormal cardiac shadows
• how to distinguish normal from abnormal structures on a chest radiograph
• how to recognize the following pathologic anatomy in the lungs:
  • interstitial processes
  • air space processes
  • lobular processes
  • malignancies
• given an appropriate radiograph, how to recognize cardiac enlargement
• various common diseases that alter patterns of lung images
• how to recognize normal structures as well as abnormal anatomy and significant pathology as seen on CT and MRI
• the physical principles of echocardiography
• various echocardiographic modes
• transthoracic or transesophageal views optimal for evaluating cardiac structures
• principles and capabilities of Doppler
• methods and calculations for evaluation of valvular lesions
• the echocardiographic grading of valvular pathology
• indications for echocardiography as outlined in the ACC/AHA guidelines

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. dictate a report on a chest imaging study that is brief and intelligible
2. describe the role of study design and the use/misuse of statistical analysis in review
   the results of published research in this surgical field
3. demonstrate the ability to use information systems to obtain pertinent information
   regarding surgical issues and problems
   and Cardiovascular Surgery, and The New England Journal of Medicine
5. use information technology to manage and provide patient-related information

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
• communicate verbally with referring physicians and house staff about radiographic
  findings
• make decisions about when to alert house staff to the urgency of a condition that is
  apparent on the radiograph
• create and sustain a therapeutic and ethically sound relationship with patients and
  their families
• listen effectively
• inform patients using effective nonverbal, explanatory, questioning, and writing
  techniques
• work effectively with other members of the health care team
• accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be able to:
• obtain informed consent for planned interventions
• determine which cases can be interpreted and dictated independently and which cases
  require the assistance of a faculty radiologist
• communicate and work effectively with radiology technicians and support staff
• demonstrate respect, compassion, and integrity
• respond to the needs of patients and society and demonstrate accountability to
  patients, society, and the profession of surgery
• demonstrate commitment to excellence and on-going professional development
• wear appropriate attire at all times
• demonstrate commitment to:
  • ethical principles pertaining to provision of or withholding of clinical care
  • maintaining confidentiality of patient information

Systems-based Practice
At the completion of this rotation, the resident will be able to:
• determine when to request a repeat examination because of technical inadequacy
• be able to determine an appropriate CT or MRI protocol to answer the clinical
  question
• describe the role of a tertiary referral center in the surgical management of simple and complex problems
• practice cost-effective health care and resource allocation that does not compromise patient care, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
• discuss the responsibility of the surgeon in managing indigent patients
• direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
• describe the role of health care managers and surgeon-extenders in surgery
• advocate for quality patient surgical care

**Duties and Responsibilities**

1. Contact radiology residents or attending radiologists when appropriate
2. Arrive in the assigned imaging area promptly and well read about the planned procedure and the expected outcome
3. Dictate all radiology notes promptly
4. Attend all teaching functions, including:
   • CT Surgery Tuesday morning conferences
   • CT Surgery Morbidity and Mortality conferences
   • CT Surgery Journal Club
   • Heart & Vascular Mortality and Morbidity conference
   • Department of Radiology conferences
   • Cardiology Conferences
5. Maintain an outside reading program
6. Participate actively in journal clubs
7. Participate in the in-house call schedule
8. Work with radiology residents, attendings, and technicians as a team
9. Work with cardiology fellows, attendings, and technicians as a team
PGY 2 ROTATION: MUSC ENDOSCOPY

Educational Goals

At the completion of this rotation, the resident will:

• be expert in bronchoscopic and esophagoscopic diagnostic skills
• understand the techniques of endoscopic esophageal and endobronchial ultrasonography
• be adept at staging patients with esophageal and lung cancer

Educational Objectives

Patient Care

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

1. demonstrate advanced skills in the diagnosis of lung and esophageal diseases by flexible endoscopy
2. use endoscopic ultrasonography and fine needle aspiration in the staging of esophageal cancer
3. use endobronchial ultrasonography and fine needle aspiration in the staging of lung cancer
4. describe the management of Barrett’s high grade dysplasia (esophageal ablation techniques)
5. demonstrate skill in stenting airways and esophageal obstructive lesions

Medical Knowledge

At the completion of this rotation, the resident will know:

1. the role of endoscopic ultrasound techniques in diagnosing lung, esophageal and mediastinal diseases
2. the palliative options for malignant airway and esophageal diseases

Practice-based Learning and Improvement

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

1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
6. use information technology to manage and provide patient-related information

Interpersonal and Communication Skills

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

1. build a collegial relationship with the GI and Pulmonary services
2. work effectively with other members of the health care team
3. listen effectively
4. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
5. accept constructive criticism and use it for self-improvement

Professionalism

At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   • ethical principles pertaining to provision of or withholding of clinical care
   • maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

System-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
3. practice cost-effective health care that does not compromise patient care
4. discuss the responsibility of the surgeon in managing indigent patients
5. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
6. describe the role of health care managers and surgeon-extenders in surgery
7. advocate for quality patient surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   • CT Surgery Tuesday Morning conferences
   • CT Surgery Mortality and Morbidity conferences
   • CT Surgery Journal Club
   • Heart & Vascular Mortality and Morbidity conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all endoscopy notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
POSTGRADUATE YEAR 2

PGY2: VETERANS ADMINISTRATION MEDICAL CENTER SURGERY

EDUCATIONAL GOALS

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

1. Evaluate patients for general surgical diseases.
2. Perform the preoperative assessment and postoperative care of patients undergoing major general surgical procedures.
3. Understand the fundamental principles of the surgical management of gastrointestinal, endocrine, body wall, other intra-abdominal, and breast disorders.
4. Evaluate patients for vascular disease.
5. Perform the preoperative assessment and postoperative care of patients undergoing major vascular procedures.
6. Understand the fundamental principles of the management of chronic and acute arterial and venous disease.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Demonstrate competence in basic techniques such as:
   a. needle aspiration of small or large lesions
   b. excision of small subcutaneous lesions
   c. knot tying
   d. suture closure of wounds
   e. venous access procedures
   f. insertion of Swan-Ganz catheters
   g. thoracentesis and paracentesis
   h. exposure and retraction
2. Perform and document the preoperative assessment and postoperative care of surgical patients including management of IV fluids and enteral and parenteral nutrition.
3. Evaluate patients for general surgical and vascular disease, including the preoperative assessment and postoperative care of patients undergoing major procedures.
4. Participate in amputations with specific attention to demarcation levels.
5. Evaluate or review the evaluation of all consults and referred patients who are scheduled to undergo surgery.
6. Perform exploratory laparotomy for acute abdominal conditions requiring surgery.
7. Demonstrate the appropriate incisions and/or exposure of:
   a. esophageal hiatus
   b. stomach
   c. pancreas
   d. duodenum
   e. colon
   f. liver and gallbladder
   g. appendix
h. rectum
i. spleen
j. kidneys
k. inguinal region
l. thyroid
m. breasts

8. Perform esophagoduodenoscopy, colonoscopy, and rigid proctoscopy.
9. Perform bowel resections with both stapled and hand-sewn anastomoses.
10. Diagnose and manage complications such as:
    a. anastomotic leaks
    b. infection/abscesses
    c. hematomas
    d. wound dehiscence/evisceration
    e. incidental or unexpected findings at laparotomy
    f. iatrogenic injury to the bowel, bladder, ureter, spleen, or other organs during a laparotomy

11. Perform local anesthesia (7 steps) for inguinal herniorrhaphy.
12. Demonstrate the ability to teach junior residents the techniques of inguinal, femoral, and incisional herniorrhaphy.
13. Assist and supervise junior residents in performing minor procedures, including central lines.
14. Perform laparoscopic procedures, such as cholecystectomy, CBD exploration, Nissen fundoplication.
15. Learn the basic techniques of inserting a peritoneal dialysis catheter.
16. Demonstrate skill in basic vascular surgical techniques, including:
    a. knowledge of instrumentation
    b. incisions
    c. closure of incisions
    d. handling of graft material
17. Participate in surgery for venous disease, including:
    a. ligation and stripping of varicose veins
    b. management of venous stasis ulcers
    c. management of venous thrombosis
18. Demonstrate the ability to perform arterial access or arterio-venous access, including:
    a. incisions
    b. closure of incisions
    c. thrombectomy and revision
19. Demonstrate proficiency in venous access procedures.
20. Learn the medical management of electrolyte abnormalities with special reference to preoperative preparation and postoperative management.
21. Be able to recognize complications of access procedures (e.g., infection, ischemia, etc)

**Medical Knowledge**

1. Describe the regional anatomy and vasculature of the abdominal wall, the peritoneal cavity, liver, gallbladder, spleen, pancreas, and the intestinal organs.
2. Provide the differential diagnosis of the acute abdomen
3. Describe the differential diagnosis, workup, and management of:
a. solitary neck mass
d. lesions of the breast
h. hernias
f. acute appendicitis
g. inflammatory bowel disease
b. soft tissue mass
i. acute cholecystitis
j. cholangitis
k. diverticulitis
l. UGI bleeding
m. LGI bleeding
n. gastric lesions
o. colorectal lesions
p. anorectal disorders (hemorrhoids, fistula, fissure, pilonidal cyst)
q. bowel obstruction

c. hyperparathyroidism
d. lesions of the breast
e. diverticulitis
h. biliary colic
i. acute cholecystitis
j. cholangitis
k. diverticulitis
l. UGI bleeding
m. LGI bleeding
n. gastric lesions
o. colorectal lesions
p. anorectal disorders (hemorrhoids, fistula, fissure, pilonidal cyst)
q. bowel obstruction

4. Outline the fundamental elements of non-operative care of the surgical patient.
5. Outline the fundamental elements of intensive care of surgical patients
   a. ventilatory management
   b. fluid management
c. medications
   d. central line monitoring
e. antibiotics
   f. sepsis
   g. hyperalimentation

6. Explain the role of the following radiologic studies in the assessment of soft tissue and abdominal disorders:
   a. radiographs
   b. ultrasound
c. nuclear medicine studies
d. MRI
e. CT scan

7. Describe human arterial and venous anatomy and related regional anatomy.
8. Describe basic arterial and venous hemodynamics.
9. Discuss the anatomy and pathophysiology of the arterial wall.
10. Describe life-threatening signs of vascular disease and indicate when immediate intervention is required.
11. Differentiate between the following diagnostic tools available for assessing vascular disease and explain the relative contribution of each:
    a. angiography
    b. computed axial tomographic scanning
c. ultrasound
d. magnetic resonance imaging

12. Summarize the pathophysiology, clinical manifestations, and therapeutic options of specific categories of vascular disease:
    a. venous disease
       i. thromboembolic disease
ii. pulmonary embolism
b. arterial disease
   i. atherosclerosis and its related disorders
   ii. occlusive disease
   iii. aneurysmal disease
c. interaction of cardiovascular and pulmonary systems

13. Discuss basic principles of Doppler ultrasound for performing bedside arterial and venous Doppler testing.

14. Outline the principles of noninvasive laboratory diagnosis, including a description of the role and limitations of the vascular laboratory:
   a. ABI / waveforms
   b. carotid duplex
   c. venous duplex
   d. PPG / LRR venous
   e. graft flow studies

15. Outline the principles of care for ischemic limbs

16. Outline the fundamental elements of non-operative care of the vascular patient, including the role of risk assessment and preventative measures.

17. Describe the hemodynamics and pathophysiology of specific clinical symptoms:
   a. claudication
   b. transient ischemic attack TIA
   c. stroke
   d. mesenteric angina
   e. angina pectoris
   f. renovascular hypertension
   g. arteriovenous fistula

18. Differentiate between acute arterial and acute deep venous occlusion.

19. Determine a plan for assessment of operative risk in these categories:
   a. cardiac
   b. pulmonary
   c. renal
   d. metabolic
   e. levels of anesthetic risk

20. Describe the use of adjunctive measures such as:
   a. antibiotics
   b. anticoagulants
   c. thrombolytic agents
   d. antiplatelet agents

21. Describe the work-up, treatment options, and surgical approach to:
   a. benign and malignant lesions of the thyroid and parathyroid glands
   b. pituitary and adrenal lesions
   c. treatment of melanoma and indications for elective and therapeutic node dissections
   d. benign and malignant breast lesions
   e. esophageal dysmotility and GE reflux
   f. gastric carcinoma
   g. peptic ulcer disease
   h. pancreatic carcinoma
   i. benign pancreatic disease
j. pancreatic necrosis
k. benign and malignant hepatic lesions
l. biliary tract obstruction secondary to tumor or stone
m. primary and secondary diseases of the spleen
n. major hematologic diseases requiring splenectomy
o. small and large bowel obstruction
p. sphincter-preservation technique for rectal cancer
q. recurrent and metastatic colon and rectal carcinoma
r. complex anorectal disease

22. As general surgery is a vast discipline by nature, this list is by no means all-inclusive.

23. Review and describe the basic clinical manifestations of the following vascular disorders:
   a. thromboembolic disease – arterial and venous
   b. chronic venous insufficiency and lymphatic obstruction
   c. portal hypertension

24. Differentiate between the following diagnostic tools available for assessing vascular disease and explain the relative contribution of each:
   a. magnetic resonance imaging and magnetic resonance angiography
   b. duplex scanning and ultrasonography

25. Summarize the etiology, pathophysiology, and therapeutic options of specific categories of vascular disease:
   a. venous disease
      i. varicose vein disease
      ii. post-phlebitic syndrome
      iii. portal hypertension
   b. lymphatic disease
      i. anatomy of lymphatic system and lymphatic return
      ii. congenital lymphatic anomalies
      iii. acquired lymphatic disease
      iv. operative procedures for correction of lymphatic disease
   c. arterial disease
      i. aortic and other vascular aneurysms
      ii. atherosclerotic vascular disease
      iii. arterial embolic disease
      iv. extracranial cerebrovascular disease
      v. visceral ischemic syndromes
      vi. renovascular hypertension
      vii. degenerative arterial disease
      viii. trauma
      ix. arteriovenous fistulas

26. Describe the natural history of medically-treated vascular disease in the following categories:
   a. carotid arterial stenosis
   b. abdominal aortic aneurysm
   c. chronic femoral artery occlusion

27. Describe the surgically correctable causes of hypertension and their diagnostic modalities.

28. Discuss the mechanics of action and the therapeutic role of the following pharmacologic types of agents:
29. Discuss the role of the following factors in maintaining homeostasis in the coagulation pathways:
   a. platelet granules
   b. endothelial cell
   c. antithrombin III
   d. platelets
   e. protein S
   f. protein C

1. Have a basic understanding of the different treatment options for a patient with end stage renal disease.
2. Indications for vascular access procedures.
3. Indications for peritoneal dialysis.

Interpersonal Communication Skills

In patients undergoing general and vascular surgery:
1. Be able to create and sustain a therapeutic and ethically sound relationship with patients and their families
2. Use effective listening skills.
3. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques.
4. Work effectively with other members of the health care team.
5. Be prepared to describe an acceptable method to handle the following example interactions:
   a. patient with long and complex medical history, having been seen by a long list of medical consultants, insists that his problems would be solved “if only someone would listen to me”
   b. nursing wound care staff repeatedly tells patients and families that they should have a different kind of wound care dressing that what the surgeon prescribed

Professionalism

While caring for patients undergoing general and vascular surgery:
1. Demonstrate respect, compassion, and integrity.
2. Demonstrate responsiveness to the needs of patients and society and supercedes self-interest.
3. Demonstrate accountability to patients, society, and the profession of surgery.
4. Demonstrate a commitment to excellence and on-going professional development.
5. Demonstrate a commitment to ethical principles pertaining to provision of or withholding of clinical care.
7. Be able to obtain informed consent for planned interventions.
8. Demonstrate sensitivity and responsiveness to patient’s culture, age, gender, and disabilities.

9. Be prepared to discuss the professional and ethical principles with respect to the following example situations:
   a. veteran patient with private insurance who is unhappy with care at Veterans Hospital wants to know if you would see him at your private office
   b. patient with VA benefits repeatedly misses scheduled clinic appointments, but rather shows up at inconvenient times in Urgent Care, demanding to be seen

Practice-based Learning

For patients undergoing general and vascular surgery:
1. Develop a method to record and track over time the results of intervention performed by the resident.
2. Be involved in the teaching of students and more junior residents and colleagues.
3. Present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention.
4. Understand the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field.
5. Review critical factors for decision making in vascular surgery
   a. risk:reward ratio
   b. morbidity and mortality probability
   c. preoperative and postoperative assessment
   d. noninvasive laboratories, duplex scanning
   e. role of advanced radiologic techniques: angioplasty, CT scanning, MRI/MRA imaging
6. Demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems.
7. Use information technology to manage and provide patient-related information.
8. Apply the decision making process in analyzing complex vascular diseases, including the following:
   a. cerebrovascular problems
   b. mesenteric vascular disease
   c. renovascular disease
   d. aneurysmal disease
   e. lower extremity arterial occlusion
   f. venous disease
9. Be prepared to describe how to obtain relevant information to support patient management in the following example situations:
   a. use of laparoscopy for repair of recurrent inguinal hernias
   b. patient who requires vascular intervention, but has a history of heparin associated thrombocytopenia

Systems-based Practice

For patients undergoing general and vascular surgery:
1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effective health care that does not compromise patient care.
4. Understand the responsibility of the surgeon in managing indigent patients.
5. Direct patients and their families towards individuals within the Institution that can help them with understanding complex issues of societal support and resources.
6. Understand an awareness of the role of health care managers and surgeon-extenders in the surgical management of patients.
8. Demonstrate awareness of the costs associated with providing care to patients.
9. Be prepared to discuss the interplay of the competing societal and patient needs in the following example situations:
   a. Whether to perform routine sigmoidoscopic examination for patients with inguinal hernia
   b. Whether to accept the transfer of patients to the VA for postoperative care after emergency surgery at another institution
**Duties and Responsibilities**

1. Attend all teaching functions, including:
   - CT Surgery Tuesday morning conferences
   - CT Surgery Morbidity and Mortality conference
   - VA Surgical Conference
   - VA Vascular Conference
   - CT Surgery Journal Club
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s cancer, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
PGY 3 ROTATION: ADULT CARDIAC SURGERY

Educational Goals
At the completion of this rotation, the resident will:

- understand and perform the evaluation of patients consulted for treatment of cardiac disease
- efficiently and accurately prep/drape patients in the operating room and perform chest opening and closure
- accurately diagnose and manage common post-operative surgical complications

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:

1. perform workup and preoperative check of patients in the same-day surgery unit, who are scheduled to undergo cardiac surgery
2. observe and assist in the operating room
3. provide preoperative and postoperative assessment and care for patients undergoing major cardiac surgical procedures
4. assess patient’s pulmonary and cardiac systems using appropriate skills in history-taking and clinical examination
5. manage routine postoperative drains, devices, and conditions:
   - chest drainage systems
   - thoracic and sternotomy incisions
   - insertion and removal of chest tubes
   - mediastinal drainage tubes
   - pneumothorax and hemothorax
   - pacemakers
6. demonstrate basic skills used in cardiothoracic surgery:
   - removal of pacemaker wires
   - chest tube insertion
   - removal of thoracic drains
   - chest tube removal
   - insertion of subclavian intravenous lines
   - thoracentesis
7. demonstrate additional surgical skills:
   - opening and closing thoracic incisions
   - open and endoscopic harvest of saphenous vein graft
   - harvest of internal thoracic, radial arteries
   - tracheostomy
8. cardiac procedures that may include:
   - pacemaker insertion
   - AICD insertion
   - pericardial window
9. evaluate patients with pulmonary disease
10. evaluate patients with cardiac disease
11. demonstrate critical care skills necessary for intensive care management of cardiothoracic patients:
• ventilatory management (modes, weaning)
• pharmacologic management of preload, myocardial contractility, heart rate and afterload recognition and management of arrhythmias
12. placement of invasive monitoring lines (arterial lines, Swan-Ganz catheters)
13. recognition and management of cardiac tamponade
14. management of pacemakers
15. assess and help directly manage cardiac trauma patients
16. recognize and initiate therapy for cardiothoracic emergencies
17. participate in donor organ retrieval

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the anatomy of the heart and its relationship to adjacent structures
2. the physiology of airway mechanics gas exchange and blood flow
3. the diagnostic tools available for assessing cardiac disease:
   • cardiac catheterization
   • echocardiography
4. the principles of preoperative assessment and postoperative care of patients undergoing major cardiac surgical procedures
5. how to identify and pharmacologically treat arrhythmias
6. how to recognize potentially urgent pulmonary and cardiac situations:
   • pulmonary emboli
   • cardiac tamponade
   • pneumonia
   • arrhythmia
   • pneumothorax
7. the physiologic derangements caused by obstruction of the coronary circulation
8. the natural history and clinical presentation of patients with valvular heart disease
9. the techniques for diagnosis and therapeutic interventions for the treatment of:
   • constrictive pericardial disease
   • pericardial effusions
   • cardiac tamponade
10. the coronary circulation of the heart
11. the physiologic derangements caused by coronary obstruction of the circulation
12. the risk factors for coronary artery bypass grafting, the physiologic derangement caused by extracorporeal bypass, and the rationale for various conduits
13. the natural history and clinical presentation of patients with valvular heart disease
14. the preoperative and postoperative management of patients undergoing valve replacement
15. the postoperative and long-term care required for cardiac transplantation patients
16. how to manage immunosuppressive therapy in cardiac transplantation
17. how to evaluate and manage organ donors
18. various modalities of ventricular assistance:
   • extracorporeal membrane oxygenation
   • mechanical ventricular assist devices
   • intra-aortic balloon counterpulsation
19. the presentation, evaluation, and treatment of patients with cardiovascular and thoracic trauma:
   • deceleration injury to the thoracic aorta
   • blunt and penetrating chest wall injury
• airway management

20. how to manage thoracic aortic aneurysms and acute and chronic aortic dissections

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. record and track over time the results of interventions performed by the resident
2. teach students and junior residents, as well as colleagues
3. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
4. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
5. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
6. use information technology to manage and provide patient-related information

Interpersonal Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
4. work effectively with other members of the health care team
5. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   • ethical principles pertaining to provision of or withholding of clinical care
   • maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

Systems-Based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
3. practice cost-effective health care that does not compromise patient care
4. discuss the responsibility of the surgeon in managing indigent patients
5. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
6. identify cases appropriate for risk management
7. describe the role of health care managers and surgeon-extenders in surgery
8. advocate for quality patient surgical care

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**Duties and Responsibilities**

1. Attend all teaching functions, including:
   - CT Surgery Journal Club
   - CT Surgical Mortality and Morbidity Conference
   - CT Residents’ Tuesday Morning Seminars
   - Heart & Vascular Mortality and Morbidity conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&Ps, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
PGY 3 ROTATION: MUSC GENERAL THORACIC SURGERY

Educational Goals
During this rotation, the resident will:
1. assume increased operative and management responsibilities
2. take part in the outpatient clinic and multidisciplinary team

Educational Objectives

Patient Care
At the completion of this rotation, the resident will be able to:
1. communicate effectively and compassionately with patients and their families regarding the diagnosis and management of lung and esophageal cancer
2. develop and carry out plans for management of patients with lung and esophageal cancer through interactions with attendings and through participation in thoracic tumor board
3. demonstrate operative skills in advanced thoracic procedures:
   - parts of laparoscopic lobectomy
   - fundoplications
   - mediastinotomy and mediastinoscopy
   - pleurodesis
   - lung decortication
4. perform all inpatient consultations
5. increase ICU management skills

Medical Knowledge
At the completion of this rotation, the resident will know:
1. the anatomy of the lungs and their relationship to adjacent structures
2. the physiology of airway mechanics, gas exchange, and blood flow
3. the diagnostic tools available for assessing pulmonary disease
   - CXR
   - pulmonary function tests
   - CT scan
   - nuclear scans
   - PET scan
4. the principles of preoperative assessment and postoperative care of patients undergoing major pulmonary surgical procedures
5. the pharmacology of drugs used in the treatment of routine arrhythmias
6. how to recognize potential urgent pulmonary situations:
   - pulmonary emboli
   - arrhythmia
   - pneumonia
   - pneumothorax
7. the indications for different thoracic incisions, the surgical impact
8. the indications and staging tools for lung cancer: CT scan, PET scan, EUS, EBUS, mediastinoscopy, thoracoscopy
9. the indications and interpretation of studies used to assess candidates for pulmonary resection:
   - PFT
• V/Q scan
• VO2 max
10. the compartments of the mediastinum and diseases/tumors in each compartment
11. the complications of lung resection and their management
12. how to evaluate the pulmonary nodule and interstitial lung disease
13. the types of pleural effusions, their evaluation and treatment
14. the anatomy of the esophagus
15. the staging process for esophageal cancer and the treatment options
16. the multimodality approach for lung cancer
17. the fundamentals of interpreting a chest CT
18. the management of emphysema
19. important esophageal motility disorders
20. the indications, contraindications, and complications of video-assisted thoracic surgery
21. the indications and principles of anti-reflux operations
22. how to assess and initially manage patients with trauma of:
   • the tracheobronchial tree
   • the lung

Practice-based Learning and Improvement
At the completion of this rotation, the resident will be able to:
1. present patients for discussion during rounds and seminars, with appropriate references to support planned intervention
2. describe the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field
3. demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems
4. demonstrate ability to practice life long learning by reading selected articles in Annals of Thoracic Surgery and the Journal of Thoracic and Cardiovascular Surgery
5. use information technology to manage and provide patient-related information

Interpersonal and Communication Skills
At the completion of this rotation, the resident will be able to:
1. create and sustain a therapeutic and ethically sound relationship with patients and their families
2. listen effectively
3. inform patients using effective nonverbal, explanatory, questioning, and writing techniques
4. work effectively with other members of the health care team
5. integrate smoothly and relate well to the operating room team
6. interact collegially with pulmonary, oncology, GI, and radiation therapists in multidisciplinary clinics and conferences
7. accept constructive criticism and use it for self-improvement

Professionalism
At the completion of this rotation, the resident will be able to:
1. demonstrate respect, compassion, and integrity
2. respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of surgery
3. demonstrate commitment to excellence and on-going professional development
4. wear appropriate attire at all times
5. demonstrate commitment to:
   - ethical principles pertaining to provision of or withholding of clinical care
   - maintaining confidentiality of patient information
6. obtain informed consent for planned interventions
7. respond sensitively to patient’s culture, age, gender, and disabilities

Systems-based Practice
At the completion of this rotation, the resident will be able to:
1. describe the role of a tertiary referral center in the surgical management of simple and complex problems
2. practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing
3. practice cost-effective health care that does not compromise patient care
4. discuss the responsibility of the surgeon in managing indigent patients
5. direct patients and their families to individuals within the institution who can help them understand complex issues of societal support and resources
6. identify cases appropriate for risk management
7. describe the role of health care managers and surgeon-extenders in surgery
8. advocate for quality patient surgical care

Duties and Responsibilities
1. Attend all teaching functions, including:
   - CT Surgery Journal Club
   - CT Surgical Mortality and Morbidity Conference
   - CT Residents' Tuesday Morning Seminars
   - Heart & Vascular Mortality and Morbidity Conference
2. Maintain an outside reading program
3. Prepare a clinical subject for presentation or publication
4. Participate in the in-house call schedule
5. Work closely with recovery rooms and intensive care units, looking for early signs of cardiac or pulmonary distress or sepsis, and initiate appropriate therapy
6. Contact senior house officers or attending surgeons when appropriate
7. Work with senior residents and attending surgeons as a team
8. Arrive in the operating room well read about the patient’s disease, the planned surgical strategy, and the expected outcome of the procedure
9. Sign all verbal orders within 24 hours
10. Dictate all operative notes promptly
11. Use the computerized patient record system (CPRS), which includes electronic H&P, electronic orders, and progress notes
12. Complete all workups of patients for ambulatory surgery
Specific Responsibilities

Personal Operative Log: Although the Division maintains a computerized registry of all thoracic cases to support the requirements of the Residency Review Committee and the American Board of Thoracic Surgery for each resident, each resident should personally maintain an operative log of cases concurrently and up-to-date. This personal log should be compared to the Division log at the end of each rotation and any differences reconciled. The Division log is the “official” log. At the end of the residency and at the time of application to the American Board of Thoracic Surgery, the individual’s on-line case log must match the official log kept by Martha Stroud.

SPECIAL NOTE FOR INTEGRATED PROGRAM RESIDENTS: In view of the proposed case requirement of 375 cases the first 3 years of the integrated program that is expected to be passed by the Thoracic Surgery RRC, it is absolutely imperative that personal case logs of everything be kept (chest tubes, paracentesis, thoracentesis, vein harvest—everything). The case logs should include the patient’s sticker, the date of the procedure, and the description of the procedure.

On-Call Responsibilities: Each resident is expected to be responsive to the needs of patients and peers when on call. Accordingly, it is the individual’s responsibility to make sure he/she is immediately available during the times on call either through the pager system or by notification of the central operator. When cross-covering other services, a regular communication with the other services should be maintained, both “checking out” and “checking in,” especially when there has been a significant change in patient status. Communication with other team members and superiors remains paramount. In-house consultations and outside telephone referrals should be dealt with courteously, professionally, and promptly. Attendings should be immediately notified of in-house consultations or outside referrals.

Out-Patient Responsibilities: Outpatient activities are an essential for providing adequate experience and continuity of patient care. The outpatient responsibilities allow the resident an opportunity to examine patients preoperatively and to consult with the attending surgeon regarding operative care as well as an opportunity to participate in the immediate postoperative care after an operation. In the outpatient setting, the resident will have the responsibility for seeing patients personally and consulting with the attending surgeon regarding follow-up care. At the VA Medical Center the resident will see all patients pre and postoperatively in the outpatient clinic. The resident on the general thoracic rotation will similarly see patients in the general thoracic clinic pre and postoperatively. The resident on adult cardiac surgery is expected to attend one attending’s clinic each week when possible. Follow-up notes are sent electronically to the residents’ review queue in Practice Partner for review for those patients in whom they participated in the operative procedure. See clinic schedule below.

<table>
<thead>
<tr>
<th>DAY</th>
<th>ATTENDING</th>
<th>LOCATION</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday All Day</td>
<td>Thoracic Clinic Drs. Reed &amp; Denlinger</td>
<td>2nd Floor HCC</td>
<td>9:00-5:00</td>
</tr>
<tr>
<td>Tuesday Morning</td>
<td>Dr. Yarbrough</td>
<td>1st Floor ART</td>
<td>8:00-11:00</td>
</tr>
<tr>
<td>Tuesday Afternoon</td>
<td>Dr. Ikonomidis</td>
<td>1st Floor ART</td>
<td>1:00-4:00</td>
</tr>
<tr>
<td>Wednesday Morning</td>
<td>VA Clinic – Cardiac</td>
<td>VAH</td>
<td>8:00-12:00</td>
</tr>
</tbody>
</table>
Operating Room Responsibilities: Residents will participate in the operating room commensurate with their level of training. Care will be taken according to the OSHA guidelines to minimize the possibility of transmission of infectious disease through the appropriate application of accepted surgical technique, including protective eyewear. Operating "cut time" at MUSC is 7:30 a.m. and residents are expected to be present in time to have the patient prepped, draped and completely ready for skin incision by 7:30 a.m. In general, a member of the operating team should be present in the room with the patient at all times. One CT resident must be in the operating room by 7:00 a.m. during anesthesia induction.

Dictation of Operative and Procedure Notes: All operations and procedures performed by surgical housestaff should be dictated immediately and no later than 24 hours after the operation. This is essential in order to ensure accuracy.

Attending physicians are notified of delinquent dictations and the resident responsible for the dictation. Residents with delinquent operative and procedure notes will be assigned inhouse call on the first available off-call Sunday of the following month during which the operation or procedure was performed. Those residents who are assigned this additional night of call will function as an intern on that service, and the intern who is assigned to be on call that day will be off.

The chief administrative resident will be responsible for the implementation of this policy, for determining those residents who are truly delinquent in the dictation of their operative or procedure notes, and for the assignment of additional inhouse call for those residents who are delinquent. This policy underscores the resident’s commitment to the prompt dictation of operative and procedure notes by the surgical housestaff.

The first offense will be a written warning from the administrative chief resident.

As a way to monitor and assure the fairness of this program, an additional requirement of the residents is that they check the appropriate box at the bottom of the front sheet on the chart to indicate that they have dictated this operative note. In addition, when checking this box they should record the date of the operation, dictation and transcription number (available at the end of every dictation) on the op note. When there is a question as to whether or not an operative or procedure note has been dictated, this form will be used to verify whether the resident has dictated the case thereby indicating that it has been lost by the Department of Health Information Services. When a procedure or operative note is in question as to whether it has been dictated and this front sheet has not been checked, initialed and dated, it then becomes the resident’s responsibility and he/she is then accountable for this late dictation.
For patients who die while in the hospital under the CT Surgery service, all death summaries are to be dictated by either a CT Surgery resident or the CT Surgery faculty member caring for the patient.

**Legal Responsibilities:** Residents must follow state and federal laws regarding licensure and prescriptions, especially of controlled substances. Administrative and medical staff guidelines at all hospitals are pertinent and applicable to housestaff. Since housestaff are also accountable in a medical-legal sense with the attending and the hospital, it is good to remember that good medicine and good documentation are the best deterrents and defense against medical-legal action.

Consent for operative procedures should be obtained by the primary operating surgeon and documented in the chart in the form of a preoperative (or pre-procedure) note. Included should be:

1. indications for the procedure
2. the risks, benefits, alternatives, and potential complications (with common ones enumerated) having been discussed
3. the possible need for blood product transfusion and its attendant risks
4. the patient’s level of understanding
5. patient’s consent to proceed

The consent form itself may be obtained by another member of the operative team although the operating surgeon is encouraged to do so, and remains ultimately responsible.

**Dress:** Cardiothoracic surgical residents are reminded that they are professionals and that their dress should be appropriate. Sneakers, jeans, tee shirts and similar attire are not appropriate. Dress shirts with ties should be worn with lab coats. Scrub suits may be worn in the hospital if covered by a clean, white lab coat. Scrub suits may not be worn routinely to commute to the hospital. They may be worn when answering an emergency call. Proper identification is required.

**Duty Hours:** *(See Policy in GME Resident Handbook)* All residents on the Cardiothoracic Surgery Service at MUSC and the VA Medical Center will adhere strictly to the Duty Hour Policy established by the GMEC Committee at MUSC. This includes both cardiothoracic residents as well as general surgical residents assigned to the service. All residents are required to report their duty hours using the E-Value system. Duty hours will be reviewed on a weekly basis by the MUSC Chief Resident in Cardiothoracic Surgery. In turn, the duty hours of each resident on the Cardiothoracic Surgery Service for the previous month will be reviewed at the monthly faculty meeting. The Chief Resident will monitor compliance with these duty hours and report on violations at the faculty meeting. In addition, he or she will report significant violations to the Program Director or his designee should significant problems arise in the interval between faculty meetings. The Division of Cardiothoracic Surgery will adhere to the MUSC GME policy that residents failing to report duty hours as required will receive a written reprimand, and repeated failure to report duty hours or falsification of duty hours will result in suspension and/or termination from the residency program.
CT SURGERY ROUNDS AND REPORTING GUIDELINES

1. CTICU rounds will start promptly at 5:30 a.m.

2. Resident on call the night before will arrive at 5:00 to pre-round in CTICU.

3. PA/NP or GS PG-1 in house the night before will not round in ICU – but will get data together for 4-East ward rounds.

4. No coffee/food/chairs on rounds.

5. Each ICU patient will have a CT resident progress note each day AND for each significant change in patient condition or procedure – (bronch, cardioversion)

6. Each patient transferred from CTICU to floor will have transfer note written by CT resident or GS PG-2. Specific issues will be communicated directly to floor PG-1 and mid levels.

7. 4-East rounds will begin promptly at 6:15 a.m.

8. Medical student progress notes do not count as official notes.

9. Each ward patient will have progress note each day by operating resident or by resident on call on weekends.

10. Afternoon rounds will begin promptly each day at 3:00 p.m. and will be led by the most senior CT resident available. If Chief Resident not available, the CT resident leading rounds will communicate findings/actions/plans to Chief Resident before leaving the hospital.

11. Resident/student not on call will be allowed to leave when rounds are completed except for most unusual circumstances.

12. Rounds at the VA will adhere to similar guidelines with times adjusted to suit conditions.

Failure to adhere to these guidelines will result in loss of operating privileges.

Date: February 13, 2009
South Carolina Licensure Requirements

Any resident practicing medicine in a residency training program must be licensed to practice medicine in South Carolina. The physician must possess a license before beginning to practice. It is a violation of state law if a physician practices before obtaining a license. The type of license depends on the circumstances involved. The State Board of Medical Examiners in Columbia is pleased to be of assistance. Contact the Board if you have any specific questions. Prior to assuming patient care duties on July 1, all residents are required to verify proof of license to the program coordinator. Any resident who is unlicensed is NOT permitted any patient contact whatsoever. He/she will be dismissed from all resident duties and not paid a resident salary until a valid license is obtained.

Controlled Substances Act

Prescribing controlled substances is a serious responsibility which offers many pitfalls for the unwary house officer. It is important to remember that DHEC regulations prohibit a practitioner from prescribing controlled substances for themselves or their families. It is illegal to prescribe a controlled substance for a friend, nurse, or secretary with whom one has not established a physician-patient relationship as documented by a written medical record. Residents are advised to be wary of hospital personnel who ask for the favor or writing them prescriptions for cough medicines, anti-anxiety agents, or pain pills who are not being seen in a well-defined doctor-patient relationship.
III. RESIDENT EDUCATION

**Resident Teaching Conference.** On Tuesdays at 7:00 a.m. the CT Resident Teaching Conference is held and this conference utilizes the Thoracic Surgery Directors Association Comprehensive Pre-Requisite Thoracic Surgery Curriculum which consists of weekly readings and videos intended to cover the entire curriculum over a two-year period. This conference is mandatory for CT residents and attending faculty. These sessions are intended to be a question and answer session where assigned attending surgeons should be conducting a half-hour discussion with the residents by asking questions and soliciting answers in order to satisfy themselves that the residents have adequately reviewed and understand the material for that session. It is not the responsibility of the assigned resident to read all the papers and deliver a didactic talk. Rather, it is the responsibility of the assigned resident to review the assigned material to make sure that it is up to date. Secondly, it is the responsibility of the assigned resident to meet with the two faculty members who are assigned for that week and confirm that the material is adequate for discussion and if further articles are required, to obtain those and distribute them to the residents and staff. Furthermore, it is the assigned resident’s responsibility to locate any assigned chapters or other articles that are not immediately accessible and distribute these to the group.

On some occasions, the presentation at Surgical Grand Rounds (which coincides with this conference) will be on a topic of interest to thoracic surgery residents. At these times, the resident teaching conference will not be held in order that the residents may attend Grand Rounds. In this case, the Tuesday morning CT Residents’ Conference is moved to Wednesday at the time of weekly Service Conference.

The 2010-2011 TSDA Curriculum Schedule and assignments are appended to this manual.

**Thoracic Tumor Board.** (Each Wednesday 12:00-1:00 p.m., Hollings Cancer Center Room Room 120.) This weekly conference is a working tumor board that brings thoracic surgeons, pulmonologists, medical oncologists, radiation oncologists, pathologists, and radiologists together to discuss cases seen in the multidisciplinary Thoracic Clinic. Each case is discussed in depth and treatment recommended. This conference exposes the residents to disciplines critical to the care of the thoracic cancer patient and to the multidisciplinary approach to their treatment. Residents assigned to the general thoracic rotation are required to attend.

**Pediatric Cardiology Diagnostic Conference.** (Each Monday 4:00-5:00 p.m., Children’s Hospital, Room 629.) All patients undergoing diagnostic evaluation during the previous week in the Division of Pediatric Cardiology are reviewed by attendings, residents, and fellows in Pediatric Cardiology and Cardiothoracic Surgery. Resident attendance is strongly encouraged and is mandatory during the dedicated congenital heart surgery rotation.

**Pediatric Cardiology/Cardiothoracic Surgery Preoperative Conference.** (Each Thursday 4:00-5:00 p.m., Children’s Hospital, Room 629.) Residents, attendings, and fellows from both the Division of Pediatric Cardiology and the Division of Cardiothoracic Surgery meet to review the data on all pediatric patients who are scheduled to undergo surgery in the upcoming week. Resident attendance is strongly encouraged and is mandatory during the dedicated congenital heart rotation.
Morbidity and Mortality Conference. (Each Wednesday 5:00-6:00 p.m., Cardiology/CT Surgery Conference Room, 7045 ART.) This weekly conference is attended by all cardiothoracic residents, general surgery residents, and students assigned to the service, as well as CT attendings. All patients hospitalized or undergoing surgery during the previous week on the cardiothoracic surgical service at the MUH or VAMC are reviewed. Deaths and complications are discussed in detail. X-rays are commonly reviewed in these conferences and pathology specimens may be reviewed when appropriate. Resident attendance at this conference is mandatory.

Adult Cardiology Cath Conference. (Each Wednesday 7:30-8:30 a.m., Auditorium, First Floor, ART.) This weekly conference is attended whenever possible by cardiothoracic residents, cardiology fellows and attendings from both services to discuss patients who have undergone diagnostic procedures and are felt to be surgical candidates. Resident attendance is encouraged when operating room assignments permit.

Heart & Vascular Morbidity and Mortality Conference. (Third Thursday each month 4:30-5:30 p.m., Auditorium, First Floor, ART.) This conference is a combined morbidity and mortality conference for the Heart and Vascular Service Line and is attended by the faculty and residents from Cardiothoracic Surgery, Cardiology, Vascular Surgery and Interventional Radiology. Attendance by CT residents is required unless patient care emergencies do not permit.

Journal Club. The South Carolina Cardiothoracic Journal Club is hosted by the Division of Cardiothoracic Surgery and is held off campus at a downtown restaurant on a monthly basis from 7:00 to 9:00 p.m. the third Thursday of each month. Attendance by CT faculty and residents is mandatory but the opportunity for all cardiothoracic surgeons in the State of South Carolina to attend is available by invitation. The most pertinent journal articles the The Annals of Thoracic Surgery and The Journal of Thoracic and Cardiovascular Surgery from the previous month are presented by CT residents and faculty and discussed in detail. Articles are critiqued for their scientific and statistical validity.

MUSC Resident Conferences. The MUSC Graduate Medical Education Office has developed a series of lectures on topics of interest to all residents at MUSC. Lectures which are required in order to successfully graduate from any residency program at MUSC are included as part of orientation. Residents are encouraged to attend other lectures of interest as clinical activities permit.

Patient Care Rounds. Patient care rounds are carried out daily by each attending. At least one of the thoracic residents as well as general surgery residents and students assigned to the service participate in these rounds during which the overall management of the patient including disease process, pathophysiology, diagnostic studies, appropriate treatment, etc., are discussed.

Educational Travel. Each resident is allowed to attend one major cardiothoracic surgical meeting yearly the final three years of training. Meetings are assigned by the Program Director. Expenses are paid by the Department of Surgery. In addition to the Department-sponsored trip,
Residents may be assigned one education conference sponsored by industry. Expenses are also paid for resident attendance for any meeting at which he/she presents a paper.

The Academic Year 2010-2011 major cardiothoracic surgical meeting schedule is listed below.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Dates</th>
<th>Location</th>
<th>Attendee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Thoracic Surgical Association</td>
<td>Nov 3-6, 2010</td>
<td>Orlando, FL</td>
<td>Dr. Enlow</td>
</tr>
<tr>
<td>Society of Thoracic Surgeons</td>
<td>Jan 31-Feb 2, 2011</td>
<td>San Diego, CA</td>
<td>Dr. Hecker</td>
</tr>
<tr>
<td>General Thoracic Surgical Club</td>
<td>Mar 3-6, 2011</td>
<td>Captive Island, FL</td>
<td>Dr. Jacks</td>
</tr>
<tr>
<td>American Association for Thoracic Surgery</td>
<td>May 7-11, 2011</td>
<td>Philadelphia, PA</td>
<td>Dr. Person</td>
</tr>
<tr>
<td>TSDA Bootcamp</td>
<td>July 8-11, 2010</td>
<td>UNC, Chapel Hill</td>
<td>Dr. Enlow</td>
</tr>
<tr>
<td>Duke Symposium (in conjunction with STS meeting)</td>
<td>Invitation Pending</td>
<td>San Diego, CA</td>
<td>Dr. Hecker</td>
</tr>
<tr>
<td>CT Technology Symposium, Cincinnati</td>
<td>Invitation Pending</td>
<td>Cincinnati, OH</td>
<td>Dr. Jacks</td>
</tr>
</tbody>
</table>

**Resident Travel Procedure.**

Meeting/travel arrangements must be made well in advance (60 days or more). The program coordinator will work with the resident in planning travel.

The departmental on-line travel request must be submitted by the program coordinator for approval prior to making any type of meeting arrangements (i.e. air line reservations and meeting registration submission, etc.).
http://academicdepartments.musc.edu/surgery/intranet/travel.htm

All trip itineraries must be approved by the Program Director prior to purchasing airline tickets.

All airline tickets must be purchased at least 30 days in advance to avoid excessive travel costs. **Airline tickets purchased less than 30 days in advance and/or penalties incurred for late registration through no fault of the division will be at the expense of the resident.**

All receipts (with the exception of meals) indicating method of payment are required for reimbursement and are submitted to departmental procurement personnel for processing. Travel expenses without appropriate receipts are not reimbursable.

**Travel Reimbursement Guidelines:**

1. Registration fees may be paid by the Division in advance upon submission of meeting registration if the registration is submitted well in advance of the registration deadline. Otherwise, registration fees are paid by the resident and will be reimbursed after the meeting with the submission of a receipt showing the credit card used for payment and a copy of the meeting brochure.
2. Airline reservations and cost must be approved by the Program Director prior to purchase of tickets. Airline fares are reimbursed with a paid receipt and itinerary details after the meeting.

3. Travel Reimbursements.

- All original receipts must be submitted.
- Parking or tolls. When a privately owned vehicle is used for transportation, the Medical University will reimburse parking fees. Paid receipts must be submitted. Toll charges will be reimbursed when accompanied by a bona fide receipt. No reimbursement will be made for tolls, garage or parking charges unless accompanied by a receipt. Either gas (with a receipt) OR mileage is reimbursed.
- Travel to and from airports should be by the most economical means; buses are usually available in most large cities. Taxi fares will be reimbursed if documented and only if other means of transportation are not available. Claims submitted for taxi fares which are used to obtain meals are a non-reimbursable expense.
- Rental cars will be reimbursed only in unusual situations and must be preapproved before the trip. A paid receipt must accompany the travel reimbursement voucher. It will be necessary to justify your need for a rental car by memo. Economy cars only will be allowed. Gas is reimbursed with a receipt.
- Hotel expenses may not be prepaid even for a one-night deposit guarantee. The hotel must be preapproved by the Program Director. The traveler may guarantee the hotel room with a credit card or personal check. Upon return, the traveler will submit the original itemized hotel invoice for reimbursement. The only allowable reimbursements from a hotel bill are the room charge and tax charge. Telephone calls and means are not reimbursed. No reimbursement will be made for overnight accommodations within 50 miles of the traveler’s official headquarters or residence. When more than one resident is attending a meeting, it is expected that they will share a hotel room unless one is accompanied by a spouse. Hotel room will be reimbursed at the single occupancy rate. NOTE: If a dependent accompanies an employee on an authorized business trip, only those expenses which may be directly attributed to the employee may be reimbursed.
- The mileage allowance is set by State travel guidelines. Expenses for transportation are reimbursable according to policies and regulations provided by the State Budget and Control Board.
- Meals (these limits are established by state policy): Specific distance and time schedule guidelines will be verified to determine the exact amount of meal allowance using airfare itinerary if available. Per diem is paid for meals at the current rates set by the State. Meals offered at the conference or included/paid with Registration will not be reimbursed. Individual meals may be deducted each day and the remaining meals can be paid at the current per diem rates.
**Resident Evaluations.** Throughout training, the resident is evaluated in several ways.

1. A summary of the resident’s operative experience is generated from the Division database on a semiannual basis. The number of operative procedures, the frequency with which he/she serves as operating surgeon, etc., are monitored to insure an adequate overall and balanced experience.

2. At the end of each rotation, the goals and objectives of that rotation are evaluated in writing by each attending involved in the rotation. These evaluations are reviewed by the Program Director.

3. At the end of each six-month interval, the resident is evaluated in a 360° fashion (by each attending in the Division as well as physician extenders, nursing in the CTICU and floor) utilizing E-Value. This evaluation covers:
   a. History taking and physical examination skills;
   b. level of general medical knowledge;
   c. knowledge of essential specialty literature;
   d. clinical judgment and diagnostic acumen;
   e. case presentations;
   f. general technical (motor) skills;
   g. patient management skills;
   h. documentation of patient information;
   i. effectiveness with patients and families;
   j. effectiveness with faculty, staff and other health professionals;
   k. professional behavior and sense of responsibility;
   l. clinical teaching skills.

   In addition to ratings in each of these areas at the end of each six-month interval, written comments regarding the resident’s strengths, weaknesses, and recommendations are included. These evaluations are then summarized by the Program Director and reviewed with the residents. A frank discussion with each resident is held at the time of each six-month evaluation and a plan developed to strengthen any weaknesses.

**In-Service Examinations.** Each CT resident is required to take and perform satisfactorily on the ABTS in-service examination each spring. A score at or greater than the 30th percentile overall is required for advancement in the program. Residents scoring at a lower level will be placed on academic probation. Participation in post exam remedial exercises is required.

**Oral Examination.** Residents are expected to master the factual information that is pertinent to the practice of cardiothoracic surgery during the course of their training, through their own studying, as well as the formal modalities outlined above. To stimulate continuity of this learning process and to document its achievement as well as to prepare the resident for examination by the ABTS, a series or oral examinations is given by the cardiothoracic faculty at 12-month intervals throughout the final three years of training. Residents are expected to pass satisfactorily a 30-minute oral examination in the following areas of cardiothoracic surgical science at specified intervals of training. In the event that a resident fails to perform adequately in one or more areas on a 12-month examination, he is required to retake and pass that portion of the examination.
<table>
<thead>
<tr>
<th>12 Months or Year 4</th>
<th>Cardiopulmonary Bypass</th>
<th>Crawford</th>
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<tbody>
<tr>
<td></td>
<td>Normal Anatomy &amp; Physiology</td>
<td>Bradley</td>
</tr>
<tr>
<td></td>
<td>Principles of Postoperative Care</td>
<td>Yarbrough</td>
</tr>
<tr>
<td></td>
<td>Benign Esophageal Disease</td>
<td>Denlinger</td>
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<tr>
<td></td>
<td>Lung Workup</td>
<td>Reed</td>
</tr>
<tr>
<td></td>
<td>Chest X-ray Interpretation</td>
<td>Crumbley</td>
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<tr>
<td></td>
<td>Thoracic Trauma</td>
<td>Kratz</td>
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<tr>
<td></td>
<td>Cardiac or Lung Transplant Workup Immunosuppression</td>
<td>Toole</td>
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<tr>
<td></td>
<td>Congenital Defects</td>
<td>Kavarana</td>
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<tr>
<td></td>
<td>Thoracic Aortic Disease</td>
<td>Ikonomidis</td>
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<thead>
<tr>
<th>24 Months or Year 5</th>
<th>Management of Complications</th>
<th>Crawford</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>CT, MRI, Nuclear Scan</td>
<td>Crumbley</td>
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<tr>
<td></td>
<td>Pediatric Cath Data</td>
<td>Bradley</td>
</tr>
<tr>
<td></td>
<td>Endoscopy</td>
<td>Denlinger</td>
</tr>
<tr>
<td></td>
<td>CABG Techniques</td>
<td>Yarbrough</td>
</tr>
<tr>
<td></td>
<td>Esophagus Workup</td>
<td>Reed</td>
</tr>
<tr>
<td></td>
<td>Cardiac Workup</td>
<td>Kratz</td>
</tr>
<tr>
<td></td>
<td>Mechanical Ventricular Assist</td>
<td>Toole</td>
</tr>
<tr>
<td></td>
<td>Septal Defects</td>
<td>Kavarana</td>
</tr>
<tr>
<td></td>
<td>Endovascular Techniques</td>
<td>Ikonomidis</td>
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<thead>
<tr>
<th>33 Months or Year 6</th>
<th>Valve Replacement Techniques</th>
<th>Crawford</th>
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<tbody>
<tr>
<td></td>
<td>Adult Cath Data</td>
<td>Crumbley</td>
</tr>
<tr>
<td></td>
<td>Pacemakers</td>
<td>Kratz</td>
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<td></td>
<td>Congenital Heart Techniques</td>
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<tr>
<td></td>
<td>Lung Resection Techniques</td>
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<td></td>
<td>Esophageal Resection Techniques</td>
<td>Reed</td>
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<tr>
<td></td>
<td>Thoracic Aortic Surgery</td>
<td>Ikonomidis</td>
</tr>
<tr>
<td></td>
<td>Tetralogy of Fallot</td>
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</tr>
<tr>
<td></td>
<td>Surgical Treatment of Heart Failure</td>
<td>Toole</td>
</tr>
<tr>
<td></td>
<td>Cardiac &amp; Lung Transplantation Techniques</td>
<td>Yarbrough</td>
</tr>
</tbody>
</table>
Resident Research Project. The Thoracic Surgery Residency Review Committee requires active resident participation in research during CT residency. In the past this has been an “informal” requirement in the MUSC Division of Cardiothoracic Surgery, and many residents have completed very nice projects and made presentations at regional and national meetings. Others have not.

Effective July 1, 2008, residents are required to complete a minimum of one (two for the six-year residents) research project(s) as a condition for completing the residency program. This requirement will be the same as other requirements for completing the program such as satisfactory performance on the in-service examination, oral examinations, and clinical performance. Residents will be required to submit a research proposal no later than December 31st of their first year. Residents should choose a topic or an area of their particular interest and select a mentor who will work with them on this project. The resident and the mentor will obtain IRB approval if required for the project and gather the required data during the months of January through October. Data analysis and a draft of the results should be completed no later than November 1-December 31. This will allow the data to be submitted to a national meeting by March 31st for presentation every third year of training. Failure to comply with this project could result in probation or dismissal from the program.

Year 1&4: Chose topic, select mentor, submit research proposal (deadline December 31)
Year 2&5: IRB approval, gather data (Jan-Oct). Data analysis and draft of results (Nov-Dec)
Year 3&6: Abstract submission (no later than March 31) and presentation at national meeting

Faculty Advisors. Each resident will be assigned a member of the full-time attending staff in the Division of Cardiothoracic Surgery as a faculty advisor. It is the responsibility of the resident to seek out these advisors on a periodic basis for review of their performance to date and for counseling regarding their performance. Advice on future career goals and further training if necessary should be sought from their individual advisors early in their training as well as from the Program Director. Advisors for academic year 2009-2010 are listed as follows:

<table>
<thead>
<tr>
<th>Resident</th>
<th>Advisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Hecker</td>
<td>Dr. Kratz</td>
</tr>
<tr>
<td>Dr. Person</td>
<td>Dr. Reed</td>
</tr>
<tr>
<td>Dr. Jacks</td>
<td>Dr. Toole</td>
</tr>
<tr>
<td>Dr. Griffin</td>
<td>Dr. Ikonomidis</td>
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<tr>
<td>Dr. Thompson</td>
<td>Dr. Crawford</td>
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<td>Dr. Enlow</td>
<td>Dr. Yarbrough</td>
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<td>Dr. DeNino</td>
<td>Dr. Ikonomidis</td>
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Letters for the Record. Letters for the record from individual faculty members regarding the performance of a resident will be retained in the resident’s file.
Faculty Evaluation by Residents. All CT residents will complete an anonymous, standardized faculty evaluation for each attending annually. The results of the faculty evaluations will be reviewed by the Chief of the Division/Program Director as well as by each individual cardiothoracic faculty member. Residents will also be requested to provide feedback regarding the residency program from time to time after they have completed the program.

Cardiothoracic Surgical Library. A specialized library is located in the resident’s office and contains current journals pertinent to cardiac and thoracic disease. This library is open 24 hours a day and is always available to residents and staff. Bound and unbound copies of the most pertinent cardiothoracic journals are kept in the library. DVD’s depicting various operative procedures as well as audiovisual equipment are available. A computer with projection equipment is also available to allow viewing of digital images and videos.

Textbooks pertinent to cardiac and thoracic disease are also available to staff and residents, but these books are kept for the most part in the attendings’ offices within the Division for security reasons. However, they are immediately available to each attending and resident.

MUSC Library. A full-service medical library exists on floors 2-4 of the Education Center and Library Building immediately adjacent to the main Medical University Hospital. Full library services are available on-line at http://www.library.musc.edu. Residents are encouraged to use the MUSC library for all pertinent literature reviews. The 2nd and 3rd floors of the Library are open 24/7 to students, faculty, residents and post-docs. An MUSC ID card is required to enter after hours or to check out materials. Entrance is made through the 2nd floor doors. Also, located on campus is the Waring Historical Library which houses volumes and articles of historical interest.

Call Rooms. Call rooms are assigned to cardiothoracic residents for use while on call. While basic housekeeping is provided, residents are expected to keep these rooms neat, clean, and free of distracting material. Call room assignments are listed below:

- PG-1 (Room 2414 ART)
- Mid Levels (Room 7070 – 7073 ART)
- CT residents (Room 4005 ART - CTICU)

Residents’ Office. An office (Room 7046 ART) is provided for use by CT residents. Access is by key assigned to each resident. The office is equipped with telephones which may not be used for personal long distance calls. A personal computer is also provided which may be used for electronic medical records, word processing, manuscript preparation, and internet access for on-line library use. Residents are expected to keep this area neat and clean and are cautioned against leaving personal valuables in this area even when the room is locked. Each resident has a designated location for receipt of mail and it is expected that each resident will check their mail on a frequent basis and discard anything that they do not intend to keep. A shredder/recycle bin is located in the residents’ office for the disposal of documents that are protected by privacy laws such as medical records.

Cell Phones. Basic cell phone coverage is provided for CT residents. Call logs may be monitored by MUSC to prevent abuse. Personal use should be limited accordingly.
**Surgical Loops.** In the event surgical loops need to be ordered, the CT Surgery Division will pay for the first set of 2.5 magnification loops. Anything beyond and after that is the individual’s responsibility. (i.e. In 2009, 2.5 magnification loops from Designs for Vision were $850. 3.5 magnification loops were $1450. The Division paid up to $850. If an individual wanted 3.5, they were responsible for the difference.)
IV. ADVANCEMENT IN THE PROGRAM

Promotion. Advancement to the next level of training requires successful completion of all characteristics of thoracic surgery including:

1. Basic science;
2. training in cognitive and technical skills;
3. development of clinical knowledge and maturity;
4. an acquisition of surgical judgment.

Completion of these goals must be documented by:

1. Faculty evaluation at six-month intervals;
2. periodic oral examination by faculty;
3. American Board of Thoracic Surgery In-Service Training Examination.

Probation. A house office may be placed on probation when he/she has failed to complete a rotation satisfactorily as determined by the attending staff on that service. A rating of “marginal” is an unsatisfactory grade. If there is disagreement among the staff on any service concerning whether or not the performance has been satisfactory, the chief of that service will make the final determination.

When an unsatisfactory evaluation is received and confirmed, the Program Director will inform the resident of the evaluation, inform the house office of his/her placement upon probation, and inform him/her of the rights to:

• Review the evaluation.
• Discuss the evaluation with the attending staff or chief of service.
• Appeal the evaluation and the probation in writing.
• Appeal the evaluation and the probation by meeting with the Program Director.

If the above steps do not resolve the issue, the house officer has the right to follow the Grievance Procedure of the Department of Surgery and/or the Medical University Hospital listed under “Grievance Procedure for Action Resulting from Academic Deficiencies.”

Probation may also be imposed for unsatisfactory standards of conduct, separate from the unsatisfactory performance evaluation. The same rules apply to this type of probation.
ACADEMIC DEFICIENCIES AND CORRECTIVE ACTIONS – refer to GME Resident Handbook

RESIDENT DISMISSAL – refer to GME Resident Handbook

GRIEVANCE PROCEDURE FOR ACTION RESULTING FROM ACADEMIC DEFICIENCIES - refer to GME Resident Handbook

DISCIPLINARY PROBLEMS AND CORRECTIVE ACTION (With Respect to State and Federal Laws) – refer to GME Resident Handbook

GRIEVANCE PROCEDURE FOR TERMINATION DUE TO MISCONDUCT (“DISCIPLINARY CAUSE”) – refer to GME Resident Handbook

V. BENEFITS – refer to GME Resident Handbook

ANNUAL LEAVE of three (3) weeks, as defined by twenty-one (21) days consisting of a maximum of fifteen (15) “working days” (Monday-Friday) plus six (6) “weekend days” (Saturday-Sunday), with pay may be given per twelve month period, unless specifically limited as required for specialty board certification. Time away from MUSC for job interviews, board exams, meetings and conferences must be taken as annual leave unless other arrangements are approved by the Program Director according to departmental policy. Annual leave is granted at the discretion of the Program Director and must be approved, in writing, by the Program Director (or his/her Designee) in advance. Residents are expected to carry out any duties or assignments as directed by their Program Director on Federal or State holidays, unless permission is granted by the Program Director (or his/her designee) according to departmental policy. Residents are not granted "compensation time" for working on Federal or State holidays unless approved in writing by the Program Director according to departmental policy. Note: Annual leave, like all other benefits to residents, does not carry over from year to year. It does not accrue over time. The Resident Agreement is for one year only, thus, at the end of each year, the terms of the agreement are void, which means all benefits end on the final day of the Agreement.

Cardiothoracic Surgery Program Annual Leave Policy:

1. Annual leave may not be taken over major holidays or the months of July or June without special permission from the Program Director.
2. Annual leave will be evenly distributed one week per third of the remaining nine months of the year for each resident.
3. Annual leave will not be taken during the same time that a resident attends a meeting.
4. Annual leave will not be taken during the time that a resident is on an off-service rotation including pediatric cardiothoracic surgery and endovascular rotations.
5. Time off over major holidays will be handled by dividing the house staff into two evenly distributed teams who will each work for half of the holiday. Holiday resident call schedules must be approved by the Program Director one month prior to the holiday.
6. Changes in scheduled vacation time must be approved in writing by the Program Director.
7. Requests for changes in scheduled vacation must be submitted at least eight weeks prior to the planned vacation.
8. Prior to any vacation time, the Medical University Request for Leave form must be filled out and submitted for approval to the Program Director.
9. BEFORE ANY RESIDENT IS ALLOWED TO LEAVE FOR VACATION OR A MEETING, ALL MEDICAL RECORD DICTATIONS AND SIGNATURES MUST BE COMPLETED.

SICK LEAVE  Refer to GME Handbook.

MATERNITY LEAVE.  Refer to GME Handbook

Paternity Leave  Refer to GME Handbook

BEREAVEMENT LEAVE  Refer to GME Handbook

PROFESSIONAL LEAVE OF ABSENCE.  Refer to GME Handbook

INTERVIEW LEAVE. Residents who need time to interview for employment positions or other postgraduate training programs may request leave from the service through the Program Director and Chief of the Division of Cardiothoracic Surgery. Annual leave is charged for time away for interviews, and prior to taking any annual leave, the Medical University Request for Leave form must be filled out and submitted for approval to the Program Director.

MOONLIGHTING. Moonlighting is not permitted for residents in the Medical University of South Carolina Cardiothoracic Surgery Residency Program.

EDUCATIONAL MEETINGS. (See also Educational Travel pages 113-115) Residents participating in a program as an author, presenter, or panelist will not have annual leave charged to them unless extra time off is taken prior to or following the meeting, and it is not directly related to the meeting. The length of their absence at the meeting is subject to the approval of the Program Director. In general, cardiothoracic residents will be funded to attend one national meeting each year and will be permitted to attend one meeting sponsored by industry. Residents who are presenting a paper at a major meeting will also be funded to attend the meeting.

Prior to the travel, the resident will discuss his planned attendance with the Program Director. All travel arrangements will be made by the Division and state reimbursement policies will be followed. Travel and housing will be by the most economical means. Information gained will be shared with other cardiothoracic residents at one of the conferences held shortly after the trip is completed.

INSURANCE COVERAGE – Refer to GME Handbook

EMPLOYEE HEALTH – refer to GME Handbook

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PARKING – refer to GME Handbook

IN-HOUSE ON-CALL MEALS – refer to GME Handbook

SEXUAL HARASSMENT – REFER TO GME RESIDENT HANDBOOK
VII. PROGRAM CERTIFICATION AND LICENSING REQUIREMENTS

American Board of Thoracic Surgery: Booklet of Information – Appendix I is a reproduction of the Booklet of Information as produced by the American Board of Thoracic Surgery. Residents should familiarize themselves with the booklet and the requisites and pertinent data of the American Board of Thoracic Surgery.


Accreditation Council for Graduate Medical Education: Program Requirements – Appendix II is a reproduction of the ACGME Program Requirements. Residents should read these requirements carefully and be familiar with these details. Ultimately, documentation of case numbers, application to the American Board of Thoracic Surgery, etc., are the resident’s responsibility. Any question regarding these requirements should always be directed to the Program Director.