

GOALS AND OBJECTIVES

by

SECTIONS / DIVISIONS / DEPARTMENTS

SURGICAL RESIDENCY TRAINING PROGRAM

DEPARTMENT OF SURGERY

MEDICAL UNIVERSITY OF SOUTH CAROLINA

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ANESTHESIOLOGY

EDUCATIONAL GOALS

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

1. Demonstrate the basic understanding of the physiologic changes associated with the induction, maintenance, and emergence of anesthesia.
2. Describe the basic pharmacology of anesthetic drugs and their interactions.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Demonstrate the ability to secure and maintain an airway without endotracheal tube placement.
2. Demonstrate the ability to properly place an endotracheal tube.
3. Demonstrate the ability to place IV's and arterial lines in a sterile manner.
4. Demonstrate the ability to administer conscious sedation in an appropriate fashion.
5. Demonstrate the ability to administer general anesthesia in a healthy patient under the direct supervision of an attending anesthesiologist.

Medical Knowledge

1. List the physiologic changes associated with the induction and maintenance of general anesthesia.
2. Understand the concept and management of emergence from anesthesia.
3. Know the basic pharmacology of the major inhalational and parenteral anesthetic agents and how they interact with other medications.
4. Be able to recognize, diagnose, and treat malignant hyperthermia.

Interpersonal Communication Skills

In patients undergoing anesthesia:

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. anesthesiologist and surgeon disagree whether a patient requires a blood transfusion preoperatively

- b. patient refuses spinal anesthetic, even though it is thought this would be safer than general anesthesia

Professionalism

While caring for patients undergoing anesthesia:

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.
6. Maintain confidentiality of patient information.
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. temporarily rescinding "Do Not Resuscitate" orders in the perioperative period for patients undergoing operation
 - b. Jehovah's witness patient undergoing major operation refuses blood transfusion

Practice-based Learning

For patients undergoing anesthesia:

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. routine use of pulmonary artery catheters in all patient undergoing vascular operation
 - b. reduction in perioperative mortality risk with epidural versus general anesthesia

Systems-based Practice

For patients undergoing anesthesia:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
8. Demonstrate awareness of the costs associated with providing anesthetic care to patients.
9. Be prepared to discuss the interplay of the competing societal and patient needs in the following example situations:
 - a. routine preoperative evaluation to consist of screening biochemistry panel, hematology, urinalysis, coagulation profile, EKG, and CXR in all patients undergoing anesthesia
 - b. type and cross blood for all patients undergoing general anesthesia

DUTIES AND RESPONSIBILITIES

1. One week in Main OR assigned with one senior anesthesia resident; attending will likely change on a daily basis.
2. One week in ambulatory OR assigned with one attending.
3. Two weeks in ECT/Pain/Preop clinics.
4. Attend Tuesday morning and Thursday afternoon lectures.
5. Attend Surgery Basic Science Lecture.

ASHLEY RIVER TOWER NIGHT FLOAT

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

PGY 1

1. Demonstrate competence in basic techniques such as:
 - a. venous access procedures
 - b. insertion of Swan-Ganz catheters
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.

PGY 2

All of the above, plus:

1. Evaluate or review the evaluation of all consults and referred patients who are scheduled to undergo surgery.
2. Perform exploratory laparotomy for acute abdominal conditions requiring surgery.
3. Deal effectively with acute cardiovascular collapse and arrest.
4. Place an arterial line and set up monitoring.
5. Place a central venous line and set up monitoring.
6. Place a Swan-Ganz catheter and set up monitoring.
7. Place a pulse oximeter on a patient.
8. Place and set up chest tubes.
9. Perform tracheostomy and percutaneous endoscopic gastrostomy with appropriate supervision and assistance.
10. Be competent in the daily management of critically ill patients.

11. 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
12. Assist and supervise junior residents in performing minor procedures, including central lines.
13. Learn the medical management of electrolyte abnormalities with special reference to preoperative preparation and postoperative management.
14. Be able to recognize complications of access procedures (e.g., infection, ischemia, etc)

Medical Knowledge

PGY 1

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. Outline the fundamental elements of non-operative care of the surgical patient.
4. 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
5. 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
6. Describe life-threatening signs of vascular disease and indicate when immediate intervention is required.
7. 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

8. 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
9. Discuss basic principles of Doppler ultrasound for performing bedside arterial and venous Doppler testing.
10. Outline the principles of care for ischemic limbs
11. Outline the fundamental elements of non-operative care of the vascular patient, including the role of risk assessment and preventative measures.
12. Differentiate between acute arterial and acute deep venous occlusion.
13. Determine a plan for assessment of operative risk in these categories:
 - a. cardiac
 - b. pulmonary
 - c. renal
 - d. metabolic
 - e. levels of anesthetic risk
14. Describe the use of adjunctive measures such as:
 - a. antibiotics
 - b. anticoagulants
 - c. thrombolytic agents
 - d. antiplatelet agents

PGY 2

1. Be able to describe the commonly used modes of artificial ventilation and the differences between them.
2. Be able to describe how PEEP, FIO₂, Vt, and Rate affect the physiology of gas exchange.
3. Be familiar with the actions, indications, contraindications, and dosages for commonly used inotropic, chronotropic, and antiarrhythmic agents.
4. Understand the use, interpretation, and maintenance of commonly used physiologic monitoring devices and the indications, contraindications, and complications of their use.
5. Understand the principles of management of closed head injury.
6. Be comfortable with the management of fluids and electrolytes.
7. Understand the pathophysiology of acute renal failure, its complications, the indications for dialysis, available modes of dialysis, and management of patients with acute renal failure or acute renal insufficiency.
8. Understand the pathophysiology of ARDS and the management of these patients.
9. Be able to discuss the pathophysiology of the Systemic Inflammatory Response Syndrome and its relationship to Multiple Organ Dysfunction Syndrome and Multiple Organ Failure.

10. Understand the principles of surgical infection and antimicrobial treatment in the ICU.
11. Understand the nutritional requirements of the critically ill patient and the means available to provide nutritional support.
12. Understand the management and causes of coagulopathy and hemorrhage in the ICU.
13. Know the function (but do not manipulate) each control on the ventilators most commonly used in the ICU.
14. Understand the means available to identify and treat as well as to minimize complications in the critically ill patient including PE, stress ulceration, decubiti, secondary infection, barotrauma, and deep venous thrombosis.
15. Understand the principles of hemodynamic management in the critically ill patient.
16. 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
 - h. peptic ulcer disease
 - i. pancreatic carcinoma
 - j. benign pancreatic disease
 - k. pancreatic necrosis
 - l. benign and malignant hepatic lesions
 - m. biliary tract obstruction secondary to tumor or stone
 - n. primary and secondary diseases of the spleen
 - o. major hematologic diseases requiring splenectomy
 - p. small and large bowel obstruction
 - q. sphincter-preservation technique for rectal cancer
 - r. recurrent and metastatic colon and rectal carcinoma
 - s. complex anorectal disease
1. As general surgery is a vast discipline by nature, this list is by no means all-inclusive.
2. 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
3. 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
4. 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
5. 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
 6. Describe the surgically correctable causes of hypertension and their diagnostic modalities.
 7. Discuss the mechanics of action and the therapeutic role of the following pharmacologic types of agents:
 - a. vasopressors
 - b. vasodilators
 - c. adrenergic blocking agents
 - d. anticoagulants
 - e. antiplatelet agents
 - f. thrombolytics
 8. 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.

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 than 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.
6. Maintain confidentiality of patient information.
7. Be able to obtain informed consent for planned interventions.
8. Demonstrate sensitivity and responsiveness to patient’s culture, age, gender, and disabilities.

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
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.

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-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
8. Demonstrate awareness of the costs associated with providing care to patients.

DUTIES AND RESPONSIBILITIES

ALL

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. Learn how to use the computerized patient record system (CPRS) which includes electronic H&Ps, electronic orders, and progress notes.
6. Attend the following conferences:
 - a. Surgical M and M Conference, Tuesday 4 pm
 - b. Basic Science Lecture, Tuesday 5 pm
 - c. Journal Club, as announced

PGY 1

All of the above, plus:

1. Attend work rounds twice daily.
2. Write orders and complete all assigned tasks.
3. Co-sign or write progress notes daily.
4. Complete the work-up of patients for ambulatory surgery.
5. Work-up all admission to the inpatient ward.
6. Notify the senior resident or attending staff of any problems.

PGY 2

All of the above, plus:

1. Cover surgical patients in the ICU.
2. Supervise junior residents during the performance of invasive procedures:
3. Closely supervise the management of all surgical ICU patients.
4. Review radiologic exams.

5. Evaluate all consults and admission and discuss with chief resident.
6. Document the assessment of the patient with appropriate plans in the chart.
7. Schedule all cases.
8. Oversee appropriate completion of the medical records by PGY 1s.

CARDIOTHORACIC SURGERY

EDUCATIONAL GOALS

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

PGY 1

1. Assess patient's pulmonary and cardiac systems using appropriate skills in history-taking and clinical examination.
2. Provide preoperative and postoperative assessment and care for patients undergoing major pulmonary and cardiac surgical procedures.

PGY 2

1. Assess patient's pulmonary and cardiac systems using appropriate skills in history-taking and clinical examination.
2. Provide preoperative and postoperative assessment and care for patients undergoing major pulmonary and cardiac surgical procedures.
3. Participate in primary management and care of patients in cardiothoracic ICU.
4. Perform initial assessment for in-hospital consultations.
5. Perform minor CT surgical procedure (ex. pacemaker pulse generator change) and assist on major CT procedures.

EDUCATIONAL OBJECTIVES

Patient Care Skills

PGY 1

1. Perform work-up and preoperative check of patients scheduled to undergo cardiac surgery.
2. Observe and assist in operating room.
3. Provide postoperative assessment and care for patients who have undergone major pulmonary and cardiac surgical procedures.
4. Assess patient's pulmonary and cardiac systems using appropriate skills in history-taking and clinical examination.
5. Become familiar with routine postoperative drains/devices/conditions:
 - a. chest tubes
 - b. jejunostomy tubes
 - c. pacemaker
 - d. mediastinal drainage tubes
6. Become familiar with basic skills used in CT surgery;
 - a. removal of pacemaker wires
 - b. insertion and removal of CT tubes
 - c. removal of thoracic drains
 - d. insertion of subclavian lines
 - e. thoracentesis
7. Improve competence in basic surgical skills including suturing and knot tying.

PGY 2

1. Perform work-up and preoperative check of patients scheduled to undergo cardiac surgery.
2. Observe and assist in operating room.
3. Provide postoperative assessment and care for patients who have undergone major pulmonary and cardiac surgical procedures.
4. Assess patient's pulmonary and cardiac systems using appropriate skills in history-taking and clinical examination.
5. Become familiar with routine postoperative drains/devices/conditions:
 - a. chest tubes
 - b. jejunostomy tubes
 - c. pacemaker
 - d. mediastinal drainage tubes
6. Become familiar with basic skills used in CT surgery;
 - a. removal of pacemaker wires
 - b. insertion and removal of CT tubes
 - c. removal of thoracic drains
 - d. insertion of subclavian lines
 - e. thoracentesis
7. Improve competence in basic surgical skills including suturing and knot tying.
8. Increase critical care skills necessary for intensive care management of cardiothoracic patients:
 - a. ventilatory management
 - b. pharmacologic management of preload, myocardial contractility, heart rate and afterload
 - c. recognition and management of arrhythmias
 - d. placement of invasive monitoring lines (arterial lines, Swan-Ganz catheters)
 - e. recognition and management of cardiac tamponade
 - f. management of pacemakers
9. Learn the technique and anatomy visualized by bronchoscopy and esophagoscopy.
10. Become competent in the following surgical skills:
 - a. opening and closing thoracic incisions (median sternotomy, thoracotomy)
 - b. harvest of saphenous vein graft
 - c. tracheostomy
 - d. cardiothoracic procedures that may include:
 - i. pulmonary wedge resections
 - ii. pacemaker insertion
 - iii. pericardial window
11. Assess and manage thoracic trauma patients.

Medical Knowledge

PGY 1

1. Increase knowledge of cardiopulmonary anatomy.
2. Understand the physiology of airway mechanics, gas exchange, and blood flow.
3. Become familiar with the diagnostic tools available for assessing pulmonary and cardiac disease:
 - a. CXR
 - b. CT scans
 - c. nuclear scans
 - d. pulmonary function tests
 - e. cardiac catheterizations
 - f. echocardiography
4. Summarize principles of preoperative assessment and postoperative care of patients undergoing major pulmonary and cardiac surgical procedures.
5. Become familiar with identification of routine arrhythmias and understand the pharmacology of drugs used in treatment.
6. Recognize potential urgent pulmonary and cardiac situations:
 - a. pulmonary embolus
 - b. pneumonia
 - c. pneumothorax
 - d. arrhythmia
 - e. cardiac tamponade

PGY 2

1. Increase knowledge of cardiopulmonary anatomy.
2. Understand the physiology of airway mechanics, gas exchange, and blood flow.
3. Become familiar with the diagnostic tools available for assessing pulmonary and cardiac disease:
 - a. CXR
 - b. CT scans
 - c. nuclear scans
 - d. pulmonary function tests
 - e. cardiac catheterizations
 - f. echocardiography
4. Summarize principles of preoperative assessment and postoperative care of patients undergoing major pulmonary and cardiac surgical procedures.
5. Become familiar with identification of routine arrhythmias and understand the pharmacology of drugs used in treatment.
6. Recognize potential urgent pulmonary and cardiac situations:
 - a. pulmonary embolus
 - b. pneumonia
 - c. pneumothorax
 - d. arrhythmia
 - e. cardiac tamponade
7. Understand the indications for plain radiography, CT scan, and PET scanning for staging lung cancer.
8. Understand the methods of invasive staging for lung cancer:

- a. bronchoscopy
 - b. mediastinoscopy
 - c. thoracoscopy
 - d. Chamberlain procedures
9. Know the indications and interpretation of studies used to assess the operability of candidates for pulmonary resection:
 - a. V/Q scan
 - b. PFTs
 - c. VO₂ max
 10. Know the compartments of the mediastinum and diseases/tumors prevalent in each compartment.
 11. Understand the complications of lung resection and their management.
 12. Understand the evaluation of the pulmonary nodule and interstitial lung disease.
 13. Understand the types of pleural effusions, their evaluation and treatment.
 14. Become familiar with the evaluation and treatment options for a patient with esophageal cancer.
 15. Become familiar with esophageal motility disorders.
 16. Understand the physiologic derangements caused by obstruction of the coronary circulation.
 17. Understand the risks and complications of coronary artery bypass operations.
 18. Become familiar with the natural history and clinical presentation of patients with valvular heart disease.
 19. Know the preoperative and postoperative management of patients undergoing valve replacement.
 20. Become familiar with the presentation, evaluation, and treatment of patients with thoracic trauma:
 - a. airway management
 - b. pulmonary contusion
 - c. blunt and penetrating chest wall injury
 - d. penetrating esophageal trauma, esophageal perforation
 - e. deceleration injury to the thoracic aorta
 21. Know the fundamentals of interpreting a chest CT scan.
 22. Understand the indications, contraindications, and complications of video-assisted thoracic surgery.
 23. Understand the indications for and principles of anti-reflux operations.
 24. Understand the presentation and management of complications of esophageal surgery.
 25. Know the techniques for diagnosis and therapeutic interventions for the treatment of:
 - a. pericardial tamponade
 - b. pericardial effusions
 - c. constrictive pericardial disease
 26. Understand the risk factors for coronary artery bypass grafting, the physiologic derangement caused by extracorporeal bypass, and the rationale for various conduits.

27. Understand the management of thoracic aortic aneurysms and acute and chronic aortic dissections.
28. Understand the evaluation and management of organ donors.

Interpersonal Communication Skills

PGY 1

1. Use effective listening skills.
2. Be able to create and sustain a therapeutic and ethically sound relationship with patients undergoing cardiothoracic surgery and their families.
3. Work effectively with other members of the health care team.

PGY 2

1. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques.
2. Use effective listening skills
3. Become comfortable with communicating with other members of the health care team.

Professionalism

PGY 1

While caring for patients undergoing cardiothoracic surgery:

1. Demonstrate respect, compassion, and integrity.
2. Maintain confidentiality of patient information.
3. Demonstrate sensitivity and responsiveness to patient's culture, age, gender, and disabilities.

PGY 2

While caring for patients undergoing cardiothoracic surgery:

1. Demonstrate respect, compassion, and integrity.
2. Maintain confidentiality of patient information.
3. Demonstrate sensitivity and responsiveness to patient's culture, age, gender, and disabilities.
4. Demonstrate accountability to patients, society, and the profession of surgery.
5. Demonstrate a commitment to excellence and on-going professional development.
6. Demonstrate a commitment to ethical principles pertaining to provision of or withholding of clinical care.

Practice-based Learning

PGY 1

For patients undergoing cardiothoracic surgery:

1. Present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention.

2. Demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems.
3. Use information technology to manage and provide patient-related information.

PGY 2

For patients undergoing cardiothoracic surgery:

1. Demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems.
2. Use information technology to manage and provide patient-related information.
3. Develop a method to record and track over time the results of intervention performed by the resident.
4. Be involved in the teaching of students and more junior residents and colleagues.
5. Understand the role of study design and the use/misuse of statistical analysis in reviewing the results of published research in this surgical field.

Systems-based Practice

PGY 1

For patients undergoing cardiothoracic surgery:

1. Understand and an awareness of the role of health care managers and surgeon-extendors in the surgical management of patients.
2. Advocate for quality patient surgical care.
3. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.

PGY 2

For patients undergoing cardiothoracic surgery:

1. Understand and an awareness of the role of health care managers and surgeon-extendors in the surgical management of patients.
2. Advocate for quality patient surgical care.
3. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
4. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
5. Understand the responsibility of the surgeon in managing indigent patients.
6. Direct patients and their families toward individuals within the institution that can help them with understanding complex issues of societal support and resources.

DUTIES AND RESPONSIBILITIES

ALL

1. Attend surgical grand rounds and other required surgical conferences.
2. Attend and participate in CT morbidity and mortality conference, special lectures, and clinics when possible.

PGY 1

1. Duties will be directed by cardiothoracic residents on morning and evening rounds and by the CT attendings.
2. Responsible for the care of preoperative and postoperative patients on the floor in collaboration with division physician extenders.
3. Participate in cardiac and thoracic surgical procedures during scheduled operating room time.
4. Take in-house night call every fourth night.
5. Assure accurate transmission of patient data during “handoff.”
6. Adhere to requirements of 80-hour work week.

PGY 2

1. Assume primary responsibility for management of patients in the CTICU.
2. Provide backup to PG-1 and physician extenders on ward.
3. Take at-home night call every third night.
4. See and assess new in-house consults and communicate findings to chief resident and responsible attending.
5. Participate in appropriate operative procedures.
6. Adhere to 80-hour work week requirements.

FLORENCE

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.

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
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 or review the evaluation of all consults and referred patients who are scheduled to undergo surgery.
4. Perform exploratory laparotomy for acute abdominal conditions requiring surgery.
5. 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

6. Perform bowel resections with both stapled and hand-sewn anastomoses.
7. 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
8. Perform laparoscopic procedures, such as cholecystectomy, CBD exploration, Nissen fundoplication.

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, work-up, and management of:
 - a. solitary neck mass
 - b. soft tissue mass
 - c. hyperparathyroidism
 - d. lesions of the breast
 - e. hernias
 - f. acute appendicitis
 - g. inflammatory bowel disease
 - 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.
 - a. antibiotics
 - b. sepsis
 - c. hyperalimentation
5. 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

Interpersonal Communication Skills

In patients undergoing general surgery in Florence:

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.

Professionalism

While caring for patients undergoing general surgery in Florence:

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.
6. Maintain confidentiality of patient information.
7. Be able to obtain informed consent for planned interventions.
8. Demonstrate sensitivity and responsiveness to patient's culture, age, gender, and disabilities.

Practice-based Learning

For patients undergoing general surgery in Florence:

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.

Systems-based Practice

For patients undergoing general surgery in Florence:

1. Understand the role of a secondary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
8. Demonstrate awareness of the costs associated with providing care to patients.

DUTIES AND RESPONSIBILITIES

1. See consults and admissions and discuss with the attending.
2. Co-sign or write progress notes.
3. Sign all verbal orders within 24 hours.
4. Do all dictations promptly.
5. Participate in the work-up of admission to the inpatient ward.
6. Participate in major general surgical cases as primary surgeon or assistant.
7. Help complete the work-up of patients for ambulatory surgery.
8. Attend outpatient clinic.
9. Provide care to patients on inpatient units of the General Surgery Service.
10. Oversee appropriate completion of the medical record.

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.
1. Understand the principles of the surgical management of obesity.

EDUCATIONAL OBJECTIVES

Patient Care Skills

PGY 1

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.

PGY 3

All of the above, plus:

- A. Evaluate or review the evaluation of all consults of referred patients who are scheduled to undergo gastrointestinal operation.
- B. Perform exploratory laparotomy for acute abdominal conditions requiring operation.
- C. 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
- D. Perform esophagogastrosopies, colonoscopies, and proctoscopies.
- E. Perform bowel resections with staple and hand-sewn anastomosis.

- F. Diagnose and manage complications such as:
 - a. anastomotic leaks
 - b. infections
 - c. hematomas
 - d. wound dehiscence and evisceration
- G. Perform laparoscopic cholecystectomy with intraoperative cholangiogram
- H. Perform laparoscopic appendectomy
- I. Perform diagnostic laparoscopy with adhesiolysis and liver biopsies

PGY 5

All of the above, plus:

- 1. Direct the organization and management of the inpatient surgical service in regards to patient management and junior and senior student and resident education.
- 2. Perform more complicated operations on:
 - a. esophageal hiatus
 - b. stomach
 - c. pancreas
 - d. duodenum
 - e. colon
 - f. liver and gallbladder
 - g. appendix
 - h. rectum
 - i. spleen
 - j. inguinal region
- 3. Perform operation for morbid obesity.

Medical Knowledge

PGY 1

- 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

PGY 3

All of the above, plus:

1. 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

PGY 5

All of the above, plus:

1. Discuss current controversies and strategies and management of the following disorders:
 - 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.
6. Maintain confidentiality of patient information.
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-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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

ALL

1. Grand Rounds, Tuesday 7 am
2. Surgical M and M Conference, Tuesday 4 pm
3. Basic Science Lecture, Tuesday 5 pm
4. GI Surgery Conference, Monday 12 noon
5. Digestive Disease Center Conference, Tuesday 5 pm
6. Journal Club

PGY 1

1. Primarily responsible for the work-up and preop check of patients evaluated in the same-day surgery unit.
2. Provide care to patients on inpatient units of GI Surgery Service.
3. Duties will be directed by more senior GI Surgery residents on morning and evening rounds and by the GI Surgery attendings.

PGY 3

1. Supervise PGY 1 residents during their performance of central line placements when necessary.
2. Provide continuity of care of surgical ICU patients.
3. Review radiological exams.
4. Evaluate all consults and admissions and discuss with chief resident.
5. Document the assessment of the patient with appropriate plans in the chart.
6. Oversee appropriate completion of medical records by intern.
7. Participate in many major cases as primary surgeon. Participate in Mock Oral Boards twice per year.
8. Participate in the Surgery call rotation.

PGY 5

1. The chief resident is expected to be directly involved in all clinical decision making.
2. Discuss consults, admissions, and complications with attending staff.
3. Participate in major surgical cases as primary surgeon.
4. Evaluate all new consults in the clinic and hospital.
5. Supervise junior residents as necessary in basic procedures.
6. Attend rounds on inpatients.
7. Participate in Mock Oral Boards twice per year.
8. Dictate all operation reports within 24 hours.
9. Maintain a primary responsibility and availability to the surgical service.

NEUROSURGERY

EDUCATIONAL GOALS

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

1. Understand the basic principles underlying the early management of acute neurological disorders such as hemorrhage or trauma to various parts of the central nervous system, spine, spinal cord, and peripheral nervous system.
2. Have a basic understanding of the anatomy and physiology of the brain.
3. Read CT scans of the head, specifically as they relate to evaluation of patients with injuries.
4. Manage postoperative patients after craniotomy or spinal procedures.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Read CT scans and MRI scans specifically related to acute processes such as trauma, hemorrhages, and hydrocephalus.
2. Interpret plain radiographs of the entire spine specifically related to trauma and degenerative disease.
3. Early management of patients with severe head injury specifically related to the ABC's, neurological assessment, and evaluation of CT scans.
4. Management of increased intracranial pressure in the ER.
5. Assessment and early management of patients with acute spinal cord injury.
6. Suture lacerations, wound care, arterial line, and central line placement.

Medical Knowledge

1. Describe basic central nervous system and peripheral nervous system anatomy. This should also include basic knowledge of head and neck anatomy as well as the spine.
2. Name the various compartments of the intracranial cavity.
3. Discuss the function of various parts of the cerebrum, brain stem, cerebellum, and spinal cord.
4. Describe the dermatomal pattern of distribution of peripheral nerves, specifically as it relates to spinal diseases such as herniated discs with radiculopathy or spinal cord injury with myelopathy.
5. Describe the basic treatment goals of spinal cord injury and spine trauma.
6. Describe the pathophysiology of increased intracranial pressure as it relates to acute processes such as hemorrhages, brain contusions, and neoplastic processes.
7. Understand the Monroe/Kelly doctrine.

Interpersonal Communication Skills

In patients undergoing neurosurgical intervention:

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. discuss criteria for brain death with the family of a patient with absence of any neurological activity after subarachnoid bleed
 - b. patient with chronic back pain that he believes is related to on the job injury, wants to be written for disability, even though there is no objective evidence of such disability

Professionalism

While caring for patients undergoing neurosurgical intervention:

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.
6. Maintain confidentiality of patient information.
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. family of pediatric patient with chronic hydrocephalus despite repeated ventricular shunt procedures wishes to have no further intervention performed
 - b. patient who sustains permanent peripheral neuropathy (peroneal) related to position of a patient in lithotomy position for elective colon surgery wants to know if he should sue the general surgeon

Practice-based Learning

For patients undergoing neurosurgical intervention:

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. use of parenteral glucocorticoid steroids after spinal cord injury
 - b. utility of hyperventilation to reduce intracranial pressure after closed head injury

Systems-based Practice

For patients undergoing neurosurgical intervention:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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. use of implantable epidural/intrathecal pumps for narcotic infusion for chronic pain
 - b. use of chemical discectomy vs open laminectomy for herniated lumbar disc

DUTIES AND RESPONSIBILITIES

1. Attend daily morning and afternoon work rounds.
2. Provide ward coverage for inpatients and write daily progress notes.
3. Facilitate discharge planning in conjunction with Social Work and complete paperwork and dictations associated with discharges.
4. Provide patients and families with updates on plans and prognoses as identified on rounds.
5. Teach basic skills and knowledge to rotating students.
6. Do admission work-ups on newly admitted patients as needed.
7. Attend Neurosurgery conferences (room 429 CSB) every Thursday beginning at 7:30 am, Grand Rounds (8th floor Storm Eye) at 11:30 am, and Spine Conference (room 429 CSB) at 4:00 pm.

8. Attend Surgery Basic Science Conference.
9. On elective cases during the day, assist with assigned cases in the operating room.
10. Perform various ER/Ward/ICU procedures:
 - a. suture lacerations
 - b. wound care
 - c. arterial and central line placement
 - d. tracheostomy
 - e. lumbar puncture or drains

ORTHOPEDIC SURGERY

EDUCATIONAL GOALS

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

1. Provide standard inpatient care of orthopedic trauma and elective patients.
2. Provide surgical assistance for major orthopedic procedures.
3. Assist in splint, cast, and orthotic application for elective and trauma patients.
4. Provide acute/emergency assessment and stabilization of patients with major orthopedic injuries.
5. Perform basic history and physical examination for acute and chronic conditions for orthopedic trauma.
6. Perform basic musculoskeletal examination for trauma patients.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Assist in splint, cast, and orthotic application for elective and trauma patients.
2. Learn basic musculoskeletal examination for trauma and elective patients.
3. Learn daily inpatient care of orthopedic trauma and elective patients.

Medical Knowledge

1. Known and understand musculoskeletal anatomy of upper and lower extremities, trunk, pelvis, and neck.
2. Understand mechanism of orthopedic injury following blunt trauma.
3. Understand signs and symptoms of compartment syndrome and how to measure compartment pressures.
4. Understand clinical scenario of fat embolism.
5. Understand prophylaxis of thromboembolic complications of orthopedic injury/reconstruction.
6. Understand basic methods of acute stabilization of orthopedic injury.
7. Understand risks/benefits of implanting prosthetic joints.
8. Be able to identify basic fractures of the extremities, trunk, and pelvis.

Interpersonal Communication Skills

In patients undergoing orthopedic 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. uncooperative patient who continues to injury upper extremity injury due to refusal to wear prescribed orthosis
 - b. patient refuses to keep scheduled clinic appointments for knee pain, but always shows up in ER after hours requesting pain medication

Professionalism

While caring for patients undergoing orthopedic 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.
6. Maintain confidentiality of patient information.
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. elderly patient with fractured hip who is not competent to give informed consent, no living will or advanced directive, and no first degree relatives available, only a close live-in friend of the same gender
 - b. college athlete or body-builder requests prescription for anabolic steroids to help enhance performance/muscle bulk

Practice-based Learning

For patients undergoing orthopedic 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. best type of prophylaxis to prevent thromboembolic disease during elective total hip arthroplasty

- b. stabilization of joint prosthesis with methylmethacrylate vs metal tissue ingrowth surfacing in 45 year old patient requiring replacement surgery

Systems-based Practice

For patients undergoing orthopedic surgery:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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. only orthopedic surgeon in town and area for 50 miles of rural country, but feel that you are unable to take trauma call every night due to exhaustion
 - b. use of total hip arthroplasty in minimally-ambulatory, nursing home patient with Alzheimers and degenerative joint disease

DUTIES AND RESPONSIBILITIES

1. Daily inpatient rounds with the orthopedic surgery residents and attendings.
2. Daily inpatient care of orthopedic patients in conjunction with orthopedic residents and attendings.
3. Assigned inpatient call including coverage of orthopedic inpatients and consultation requests from other services and the Trauma Center.
4. Assist in orthopedic operations, both inpatient and outpatient.
5. Attend orthopedic conferences including Grand Rounds, Orthopedic Case Conference, Basic and Clinical Science Lectures , and pre-operative indications conferences.
6. Attend Surgery Basic Science Conference.

OTOLARYNGOLOGY

EDUCATIONAL GOALS

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

1. Perform a head and neck examination.
2. Understand the staging system and work-up for head and neck cancer.
3. Describe the normal anatomy of the head and neck.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Perform an adequate and thorough head and neck examination.
2. Assist in operating room as requested by attendings and chief residents.

Medical Knowledge

1. Describe the normal anatomy of the following:
 - a. tympanic membrane
 - b. nasal passages
 - c. oral cavity
 - d. oropharynx
 - e. hypopharynx
 - f. larynx
2. Assess a patient's head and neck complaint using appropriate history taking and clinical examination skills.
3. Describe the staging system for head and neck cancer.
4. Describe the staging work-up for patients with head and neck cancer.

Interpersonal Communication Skills

In patients undergoing head and neck 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 refuses to consider surgical intervention (modified radical neck dissection) for newly diagnosed cancer
 - b. oral surgeon on the staff at the hospital wants to do elective facial plastic surgery, but refuses to take facial trauma call

Professionalism

While caring for patients undergoing head and neck 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.
6. Maintain confidentiality of patient information.
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. patient's estranged son keeps calling to find out results of treatment for laryngeal cancer because father (patient) won't tell him
 - b. patient in ICU had emergent cricothyrotomy and attending service requests conversion to tracheotomy, but patient is unresponsive and has no immediate family members

Practice-based Learning

For patients undergoing head and neck 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. fine needle vs excision biopsy of "rubbery" feeling supraclavicular node
 - b. radiation therapy alone vs laryngectomy and modified radical neck dissection for laryngeal cancer

Systems-based Practice

For patients undergoing head and neck surgery:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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. patient with laryngeal cancer and nodes involving carotid artery, would require carotid excision for resection
 - b. routine tonsillectomy for any pediatric patient with recurrent tonsillitis (second episode)

DUTIES AND RESPONSIBILITIES

1. Participate in daily AM and PM Rounds.
2. Assist PGY 2 with ward work, orders, and work-ups.
3. Participate in clinics as requested by attendings and chief residents.
4. Assist in operating room as requested by attendings and chief residents.
5. Conferences and clinics:
 - a. Head and neck planning session, Monday 7:30 am, 10th floor main conference room
 - b. Tumor Board, Monday 1 pm, 2nd floor conference room Hollings
 - c. Weekly conference, Monday 5 pm, 1st floor conference room, Rutledge Tower annex
 - d. Resident's conference, Tuesday 7 am, 1st floor Rutledge Tower Annex
 - e. Lecture, Tuesday 5 pm, 1st floor Rutledge Tower Annex
 - f. Surgery Basic Science Conference, Monday 7 am
6. Daily meet in Resident's office 2nd floor Rutledge Tower Annex at 6 am, then round until 7 am.
7. Do am work-ups for scheduled cases and any work-up deficiencies on the same.
8. Between 2 pm and 4:30 pm print and post Main OR and Ambulatory OR surgery schedules for following day in resident's office.

PEDIATRIC SURGERY

EDUCATIONAL GOALS

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

1. Understand how to evaluate and manage a pediatric patient that may need operative treatment.
2. Understand how to approach a child (and family) for surgical evaluation.
3. Understand how to examine a pediatric patient.
4. Understand reasonable diagnostic interventions.
5. Understand when to refer a patient to pediatric surgery.
6. Understand pre- and postoperative management of pediatric patients, including fluid/electrolyte/nutritional management.

EDUCATIONAL OBJECTIVES

Patient Care Skills

PGY 1

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. insertion of nasogastric tube
2. Perform and document the preoperative assessment of postoperative care of surgical patients.
3. Perform preoperative assessment and postoperative care of pediatric patients undergoing major or minor (outpatient) procedures.
4. Work-up of patients admitted to the pediatric surgical service and/or seen in the outpatient clinic.

PGY 2

All of the above, plus:

- b. Management of critically ill newborn and pediatric patients
- c. Initial assessment and management of pediatric burn and trauma patients
- d. Demonstrate confidence in basic techniques including:
 - a. exposure and retraction
 - b. abdominal and chest incisions
 - c. handling of surgical instruments
 - d. surgical prep, dressings, patient positioning
 - e. central venous access procedure
 - f. preparation of the surgical field and lights
 - g. use of different suture types
 - h. skin grafting and wound debridement
 - i. burn wound management

- j. facial and skin closure
- e. Evaluate or review the evaluation of all consults of referred patients who are scheduled to undergo gastrointestinal operation.
- f. Perform exploratory laparotomy for acute abdominal conditions requiring operation.
- g. Perform esophagogastrosopies, colonoscopies, and proctoscopies.
- h. Perform bowel resections with staple and hand-sewn anastomosis.
- i. Diagnose and manage complications such as:
 - e. anastomotic leaks
 - f. infections
 - g. hematomas
 - h. wound dehiscence and evisceration
- j. Perform laparoscopic cholecystectomy with intraoperative cholangiogram
- k. Perform laparoscopic appendectomy
- l. Perform diagnostic laparoscopy with adhesiolysis and liver biopsies
- m. Evaluation and initial assessment of consult patients.

PGY 4

All of the above, plus:

- n. 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
- 3. Direct the organization and management of the inpatient surgical service in regards to patient management and junior and senior student and resident education.
- 4. Perform more complicated operations on:
 - a. esophageal hiatus
 - b. stomach
 - c. pancreas
 - d. duodenum
 - e. colon
 - f. liver and gallbladder
 - g. appendix
 - h. rectum
 - i. spleen
 - j. inguinal region
 - k. lung
 - l. esophagus
 - m. head and neck

Medical Knowledge**PGY 1**

1. Understand and implement ATLS guidelines for the management of pediatric trauma patients. Familiarity with pediatric trauma lab protocols, clearance of the pediatric cervical spine, and indications for specialized consultations.
2. Estimation of total body surface area burn for pediatric patients, including assessment of burn depth.
3. Fluid resuscitation for pediatric burn and trauma patients. Parkland formula. Describe how to calculate total blood volume in infants and children and how it applies to volume/blood replacement.
4. Understand the indications and interpretation of diagnostic peritoneal lavage, CT scanning, and plain radiographs.
5. Describe, understand, and differentiate life-threatening injuries. Discuss management principles and hemodynamic monitoring in the PACU.
6. Outline the fundamental elements of nonoperative care of the pediatric trauma patient.
7. Describe principles of trauma/burn prevention.
8. The surgery resident must develop general knowledge and skills for the recognition and management of the esophagus:
 - a. strictures
 - b. gastroesophageal reflux
 - c. foreign bodies
9. The surgery resident must develop general knowledge and skills for the recognition and management of the stomach/duodenum/pancreas:
 - a. pyloric stenosis
 - b. foreign bodies (especially batteries)
 - c. atresia and stenosis
 - d. annular pancreas
 - e. pancreas divisum
10. The surgery resident must develop general knowledge and skills for the recognition and management of the biliary tract/liver/spleen:
 - a. choledochal cysts
 - b. cholelithiasis
 - c. post splenectomy sepsis
11. The surgery resident must develop general knowledge and skills for the recognition and management of the intestines/colon/anorectum:
 - a. intestinal atresias
 - b. intestinal duplications
 - c. inflammatory bowel disease
 - d. appendicitis/acute abdomen in children
 - e. Meckel's diverticulum
 - f. intussusception
 - g. Hirschsprung's disease
 - h. neonatal necrotizing enterocolitis

12. The surgery resident must develop general knowledge and skills for the recognition and management of the abdominal wall:
 - a. inguinal hernia: indirect, direct, femoral
 - b. umbilical and epigastric hernias
 - c. abdominal wall defects: omphalocele and gastroschisis
13. The surgery resident must develop general knowledge and skills for the recognition and management of the chest wall:
 - a. pectus excavatum
 - b. pectus carinatum
14. The surgery resident must develop general knowledge and skills for the recognition and management of the lungs/pleura/diaphragm:
 - a. congenital diaphragmatic hernia (CDH)
 - b. diaphragmatic eventration and rupture
 - c. empyema
 - d. pneumonia/pneumatocele
 - e. pneumothorax
 - f. respiratory distress syndrome (RDS)
 - g. meconium aspiration
15. The surgery resident must develop general knowledge and skills for the recognition and management of the heart and mediastinum:
 - a. persistent ductus arteriosus; cyanotic and acyanotic heart lesions
16. The junior resident is expected to obtain basic knowledge in the field of pediatric oncology as it applies to general surgeons. The following topics and tumors are considered important, and the resident is expected to learn pathology, management principles, staging, and prognosis:
 - a. Wilms's tumor
 - b. neuroblastoma
 - c. lymphomas (Hodgkin and non-Hodgkin)
 - d. vascular access for chemotherapy
17. The surgery resident must develop general knowledge and skills for the recognition and management of the following conditions:
 - a. inflammatory neck masses
 - b. congenital neck masses
 - i. torticollis
 - ii. thyroglossal duct cyst/sinus
 - iii. branchial cleft cysts, sinuses, and remnants
 - iv. cystic hygroma
 - v. hemangiomas
18. The surgery resident must develop general knowledge and skills for the recognition and management of the following conditions:
 - a. undescended testicles
 - b. phimosis
 - c. hydrocele
19. The surgery resident must understand pathophysiology and management principles of the following:
 - a. physiology of the premature infant

- b. neonatal fluid and electrolyte management
 - c. neonatal nutritional assessment and management
 - d. hyperbilirubinemia
 - e. hypoglycemia
 - f. hypocalcemia
 - g. neonatal respiratory distress syndrome
20. The surgery resident must develop general knowledge and skills in the following areas of pediatric intensive care:
- a. fluid, electrolyte, and nutritional management
 - b. hemodynamic monitoring
21. The surgery resident must develop general knowledge in the field of imaging as it relates to indications, techniques, and interpretation of the following:
- a. plain radiographs (particularly chest and abdomen)
 - b. contrast studies (barium enema, upper GI, small bowel follow-through, etc)
 - c. ultrasonography

PGY 2

All of the above, plus:

1. Discuss the anatomy, pathology, and pathophysiology of the pediatric airway and understand indications as well as techniques for emergent airway access in pediatric patients.
2. Understand and describe the pathophysiology and management of solid organ and hollow viscus injuries in children.
3. Understand the indications, technique, and timing for burn debridement and grafting.
4. Understand the pathophysiology and management principles of CNS/spine/cord injury. Describe indications, technique, and interpretation of intra-cranial pressure monitoring in children. Management of elevated ICP Glasgow pediatric coma score.
5. Describe the anatomy, pathophysiology, and management principles of chest trauma in pediatric patients. Understand the indications and techniques for thoracentesis/thoracostomy/thoracotomy. Pulmonary physiology and ventilator management in pediatric patients.
6. Evaluation and early management of pediatric skeletal and vascular injuries.
7. The surgery resident must develop general knowledge and skills for the recognition and management of the esophagus:
 - a. duplication cysts
8. The surgery resident must develop general knowledge and skills for the recognition and management of the biliary tract/liver/spleen:
 - a. biliary atresia
 - b. hypersplenism/ITP/sickle cell disease
 - c. hemolytic anemias
 - d. post splenectomy sepsis
9. The surgery resident must develop general knowledge and skills for the recognition and management of the intestines/colon/anorectum:
 - a. imperforate anus
 - b. malrotation and volvulus

- c. meconium ileus/plug
 - d. small left colon syndrome
 - e. neonatal necrotizing enterocolitis
10. Provide the differential diagnosis of the acute abdomen.
11. The surgery resident must develop general knowledge and skills for the recognition and management of the chest wall:
 - a. cleft sternum
 - b. chest wall tumors
12. The surgery resident must develop general knowledge and skills for the recognition and management of the lungs/pleura/diaphragm:
 - a. congenital cystic adenomatoid malformation (CCAM)
 - b. pulmonary sequestration
 - c. cyst/abscess
 - d. pulmonary hypoplasia
 - e. principles of ECMO/physiology of persistent fetal circulation (PFC)
 - f. airway disease, tracheal stenosis
13. The surgery resident must develop general knowledge and skills for the recognition and management of the heart and mediastinum:
 - a. vascular rings
 - b. coarctation
 - c. mediastinal masses
14. The junior resident is expected to obtain basic knowledge in the field of pediatric oncology as it applies to general surgeons. The following topics and tumors are considered important, and the resident is expected to learn pathology, management principles, staging, and prognosis:
 - a. gonadal tumors
 - b. teratomas
 - c. rhabdomyosarcomas
 - d. skeletal tumors (osteogenic sarcoma, Ewings, etc)
 - e. liver tumors (hepatocellular carcinoma and hepatoblastomas)
 - f. endocrine tumors, MEN syndromes
 - g. thyroid cancer
15. The surgery resident must develop general knowledge and skills for the recognition and management of the following conditions:
 - a. thyroid tumors and anomalies
16. The surgery resident must develop general knowledge and skills for the recognition and management of the following conditions:
 - a. urinary obstruction
 - b. ovarian cysts
17. The surgery resident must understand pathophysiology and management principles of the following:
 - a. neonatal sepsis
 - b. neonatal hemodynamic monitoring
18. The surgery resident must develop general knowledge and skills in the following areas of pediatric intensive care:
 - a. vascular access, cutdowns, and central lines

- b. pediatric mechanical ventilation
 - c. pediatric airway management and tracheostomies
19. The surgery resident must develop general knowledge in the field of imaging as it relates to indications, techniques, and interpretation of the following:
- a. computerized tomography

PGY 4

All of the above, plus:

- 1. The surgery resident must understand pathophysiology and management principles of the following:
 - a. jet ventilation, high frequency oscillator, ECMO, and pressure/volume ventilation
 - b. esophageal atresia
 - c. tracheoesophageal fistula

Interpersonal Communication Skills

In pediatric patients undergoing surgery:

- 1. Love the kids and respect their families.
- 2. Be able to create and sustain a therapeutic and ethically sound relationship with patients and their families
- 3. Use effective listening skills.
- 4. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques.
- 5. Work effectively with other members of the health care team.
- 6. Be prepared to describe an acceptable method to handle the following example interactions:
 - a. family of patient with large thyroglossal cyst of the neck will agree to operation as long as you promise that there will be no recurrence or scar
 - b. family of a patient who underwent endorectal pull-through operation demands to know why patient received blood transfusion, when they are certain that this possibility was never discussed with them preoperatively

Professionalism

While caring for pediatric patients undergoing 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.
- 6. Maintain confidentiality of patient information.
- 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. mother of a patient with renovascular hypertension from mid-aortic coarctation wants to proceed with operative repair to reduce long term risk of death from hypertension, but estranged father (who is responsible for all medical costs of child) strongly disagrees and believes it to be unnecessary
 - b. during examination, young daughter of 2 years found to have ambiguous genitalia

Practice-based Learning

For pediatric patients undergoing 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. repair of pyloric stenosis by laparotomy vs laparoscopy
 - b. in a two year old patient with left inguinal hernia, whether to explore the right side in case a subclinical hernia exists

Systems-based Practice

For pediatric patients undergoing surgery:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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. repair of pectus excavatum in a patient without significant respiratory compromise, but self-conscious patient
- b. routine circumcision for all male infants

DUTIES AND RESPONSIBILITIES

ALL

1. Attend the following conferences:
 - a. Grand Rounds, Tuesday 7 am
 - b. Surgical M and M Conference, Tuesday 4 pm
 - c. Basic Science Lecture, Tuesday 5 pm
 - d. Surgery Journal Club
 - e. Pediatric Tumor Board, Wednesday 4 pm
 - f. Pediatric Surgery lecture Series, Thursday 4 pm
 - g. Attending Rounds

PGY 1 / PGY 2

1. Attending and prepare for daily AM and PM work rounds.
2. Communicate effectively with medical and nursing staff, peer residents, pediatric residents, and attendings.
3. Display a positive attitude towards work.
4. Caring and supportive of patients and families.
5. Write orders and complete daily assigned tasks.
6. Sign all verbal orders given.
7. Work up patients on the pediatric Surgical Service (inpatient or outpatient).
8. Provide ward coverage for inpatients and write daily progress notes. (Co-sign and comment on any student note. All notes must be timely, informative, easy to read, and reflect the patient's current status and management plan. All signatures must be legible.)
9. Participate in in-house call rotation as assigned.
10. Attend outpatient clinic (Wednesday 9 am to 3 pm and Friday 9 am to 12 noon).
11. Primary responsibility for managing NICU and PICU patients is for PGY 2 and higher, but PGY 1 is encouraged to participate as much as possible.
12. All residents must interact with and instruct medical students when appropriate.
13. Make appropriate arrangements for patient admission, transfer, or discharges.
14. Dictate all discharge summaries within 24 hours from the time of discharge.
15. Dictate operative notes if requested by attending surgeon immediately following the operation.
16. Any treatment or management decisions, particularly patient care issues, must be verified and approved by the senior resident and/or attending surgeon.
17. Seek help and assistance when appropriate.
18. PGY 2 function as senior/junior chief resident when PGY 4 is away.

PGY 4

All of the above, plus:

1. Supervise the pediatric surgical service, rounds, junior residents/students, operating room schedule, elective and add-on cases, emergency cases, and management of the pediatric surgery and trauma/burn patients.

2. Prompt and complete evaluation of all and any consults for pediatric surgery. The chief resident is expected to personally see all consults and to develop a treatment plan after evaluation and discussion with the attending surgeon on-call.
3. Participate in all main operating room cases and assign residents to other cases.
4. Evaluation and management of all pediatric trauma patients admitted to the hospital and/or any critical pediatric trauma patients not evaluated and discharged by the trauma resident on call.
5. Organize and structure effective work and teaching rounds.
6. Assign junior residents and medical students to specific work/tasks/operations.
7. Assure completeness of documentation (progress notes, operation notes, discharge summaries, etc) in the patient's chart. The senior resident is expected to have an admission note and at least a pre-operative note in all charts of patients admitted to the pediatric surgery service.

PLASTIC SURGERY

EDUCATIONAL GOALS

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

1. Provide the initial evaluation and management of patients with facial trauma.
2. Provide the initial evaluation and management of patients with hand trauma.
3. Describe the scope of disorders treated by plastic surgeons.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Perform initial emergency department evaluation and management of facial trauma.
2. Perform initial emergency department evaluation and management of hand trauma.
3. Learn to evaluate and manage a wide variety of wounds, both acute and chronic.
4. Assist in the surgical management of patients with congenital deformities.
5. Assist in the surgical management of patients seeking surgery for cosmetic reasons.

Medical Knowledge

1. Understand the scope of the disorders and conditions treated by plastic surgeons.
2. Understand the initial evaluation of hand trauma.
3. Understand the initial evaluation of facial trauma.
3. Understand the evaluation and management of a wide variety of wounds.
20. Understand the basic options for the management of patients with congenital deformities.
21. Understand the types of procedures available for surgery for cosmetic reasons.

Interpersonal Communication Skills

In patients undergoing plastic 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 micrognathia brings in a picture of a well-known movie star, confident that you can make her look like the person in the picture

- b. recently referred patient who injured left hand working on a drill press 10 years ago demands that you write him for permanent disability

Professionalism

While caring for patients undergoing plastic 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.
6. Maintain confidentiality of patient information.
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. patient seeking rhinoplasty for subtle modification who you subsequently learn has undergone 9 previous cosmetic facial operations
 - b. emotionally labile female patient comes to the office seeking augmentation mammoplasty, having just separated from her husband of 10 years

Practice-based Learning

For patients undergoing plastic 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. immediate vs delayed breast reconstruction after modified radical mastectomy
 - b. prevention of recurrent keloids in a patient with multiple facial lacerations and scars

Systems-based Practice

For patients undergoing plastic surgery:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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. immediate debridement and grafting vs delayed grafting after 10% full thickness burn injury to the back
 - b. relative costs of rotational flap coverage of a sacral decubitus vs debridement and wound care in a paraplegic patient

DUTIES AND RESPONSIBILITIES

1. Performance of evaluations and work-ups under the supervision of a Plastic Surgery resident.
2. Provide assistance in the care of hospitalized Plastic Surgery patients.
3. Assist in operative care of Plastic Surgery patients to the limits of their abilities.
4. Provide care for Plastic Surgery patients seen in the outpatient clinic, including MUH Clinic or James Island office.
5. Take call from home every third night, along with a Plastic Surgery resident.
6. Attend Surgery Basic Science Conference, Tuesday 5 pm.
7. Attend Weekly Plastic Surgery Didactic Conference, Tuesday 4-7:30 pm
8. Attend Weekly Hand Conference, Thursday 6:30 am

BREAST/ENDOCRINE

EDUCATIONAL GOALS

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

1. Exhibit a broad knowledge base, good judgement, and appropriate technical skills for the surgical treatment of breast and endocrine diseases.
2. Appreciate the complex co-morbidities often associated with the patient with breast cancer or endocrine disease.
3. Be aware of the limitations of surgery and the areas wherein the very best combination of surgery and other modalities has not been reached.

EDUCATIONAL OBJECTIVES

Patient Care Skills

PGY 2

1. Demonstrate normal parathyroid anatomy in the operating room at the time of parathyroidectomy or thyroidectomy.
2. Interpret a sestamibi scan.
3. Perform the following steps of parathyroidectomy (Be able to describe difference in performing a full neck exploration, minimally invasive approach, unilateral or focused) Patient positioning and marking of skin incision and raising subplatysmal flaps, opening strap muscles .
4. Locate the adrenal glands on a CT scan
5. Identify adrenal anatomy, blood supply, and surrounding structures at the time of adrenalectomy or other operation. Demonstrate operative exposure (open or laparoscopic) of either adrenal gland.
6. Obtain a focused history, perform an examination, and institute the diagnostic evaluation of a patient with the following conditions: Thyroid nodule, goiter, hyperthyroidism.
7. Palpate and describe a thyroid nodule
8. Palpate and describe a goiter
9. Identify exophthalmoses
10. Perform a fine needle aspiration biopsy of a palpable thyroid nodule with and without ultrasound guidance in the operating room.
11. Perform the initial steps in thyroid surgery, including patient positioning and marking, skin incision and raising subplatysmal flaps, opening strap muscles, close strap muscles, platysma, and skin.
12. Perform an appropriate and adequate history and physical examination of the patient with breast or endocrine disease.
13. Perform the various interventions necessary to obtain tissue for diagnosis:
14. needle biopsy
15. true-cut biopsy
16. stereotactic biopsy

17. incisional biopsy
18. excisional biopsy
19. Be able to document all the tissue required to produce the needed diagnosis has been obtained and delivered to the appropriate sources in the appropriate state.
20. Be aware of the limitations of surgery and the areas wherein the very best combination of surgery and other modalities has not been reached.

PGY 4

All of the above, plus:

1. Perform a parathyroidectomy including \intraoperative identification and resection of adenoma, intraoperative identification of normal parathyroid glands, intraoperative identification of hyperplasia, perform a parathyroid gland autotransplantation
2. Participate in a re-exploration for persistent or recurrent hyperparathyroidism.
3. Interpret a neck ultrasound, demonstrating parathyroid glands.
4. Identify typical locations where an abnormal parathyroid may be visualized during ultrasound of the head and neck
5. Participate in or learn the protocol and value of performing a fine needle aspiration of a parathyroid with measurement of PTH levels on the needle washout.
6. In addition to the previous objectives, by the completion of the fourth clinical year, the general surgery resident should be able to:
7. Participate and perform most of an adrenalectomy (open or laparoscopic), including patient positioning, dissection, resection, and postoperative care.
8. Assist and/or perform major surgical resection for breast disease or endocrine disorders in the operating room.
9. Perform cervical ultrasonography and interpret cervical images.
10. Perform ultrasonography guided FNA in the operating room
11. Identify which ultrasound equipment/probes are best used for head and neck ultrasonography.
12. Identify normal structures visualized during ultrasound of the head and neck (Thyroid, parathyroid, lymph nodes, trachea, carotid artery, internal jugular vein, inferior and superior thyroid vessels, parotids, submandibular glands)
13. Describe the echogenicity of a visualized structure as hypoechoic, isoechoic, anechoic or hyperechoic relative to the normal thyroid gland.
14. Use ultrasound to localize parathyroid adenomas and adenopathy.
15. Describe which features of a thyroid nodule on ultrasound are more worrisome for malignancy.

Medical Knowledge

PGY 2

By the completion of the second year, the general surgery resident should be able to:

1. Demonstrate normal parathyroid anatomy in the operating room, including typical gland locations, blood supply, and relationship to the recurrent laryngeal nerves and other adjacent structure.

2. Outline the normal calcium metabolic pathway including vitamin D metabolism, parathyroid hormone production and regulation
3. Describe the impact of specific medications and medical conditions on serum calcium and calcium metabolism.
4. Outline the evaluation and treatment of life-threatening hypercalcemia.
5. Outline the appropriate evaluation for the following clinical scenarios, including interpretation of expected test results: Primary hyperparathyroidism, secondary hyperparathyroidism, tertiary hyperparathyroidism, hypercalcemia associated with malignancy, hypercalcemia associated with medications
6. Develop an algorithm that includes pertinent history, examination findings, and initial diagnostic evaluation of: asymptomatic primary hyperparathyroidism, symptomatic primary hyperparathyroidism.
7. Be familiar with current Consensus guidelines for surgical treatment of asymptomatic patients. Discuss the initial evaluation of patients with asymptomatic hyperparathyroidism being considered for observation or surgery.
8. Outline outpatient follow up after parathyroidectomy.
9. Outline an algorithm for the preoperative localization of parathyroid gland(s) in patients with primary hyperparathyroidism. Discuss the rationale and accuracy of the various localizing strategies and tests.
10. Outline an algorithm for intraoperative confirmation of successful parathyroidectomy during full neck exploration and minimally invasive parathyroidectomy.
11. Describe differences between a bilateral 4-gland exploration, a unilateral exploration and a focused exploration.
12. Outline the prevention, recognition, and management of hungry bone syndrome after parathyroidectomy.
13. Outline a diagnostic and treatment pathway for patients with non-MEN familial hyperparathyroidism.
14. Describe the technique of cryopreservation and its role in the treatment of patients with multigland disease or during reoperative parathyroid surgery
15. Outline the interpretation of intraoperative PTH monitoring results and their correlation with postoperative eucalcemia
16. Describe the physiology of the adrenal gland, distinguishing differences in the cortex and medulla.
17. Describe the anatomy of the adrenal gland, including the arterial supply, venous drainage and relationship to adjacent structures.
18. Outline the catecholamine synthetic pathway.
19. Identify the etiologies, common signs and symptoms, and clinical presentations, preoperative evaluation and surgical management of Cushing's syndrome, primary hyperaldosteronism, adrenocortical carcinoma and pheochromocytomas.
20. Describe the protocol for perioperative steroid use in a patient taking exogenous steroids.
21. Identify complications of adrenalectomy, including adrenal insufficiency and the diagnosis, treatment, and causes.

22. Outline the diagnostic pathway of ACTH dependent vs. ACTH independent Cushing's syndrome, including the role of the low and high dose dexamethasone suppression test.
23. Describe the localization studies available for adrenal tumors, including CT scanning, MIBG, PET scanning, and MRI.
24. Describe the evaluation and treatment of an adrenal incidentaloma.
25. Explain the role of fine needle aspiration biopsy in the evaluation of adrenal tumors.
26. Describe operative approaches for adrenal surgery, including the laparoscopic trans- and extraperitoneal approaches and anterior, lateral and posterior open approaches.
27. Understand functioning imaging modalities for pheochromocytoma and adrenal hyperplasia (i.e., MIBG or NP 59 scanning)
28. Understand technique involved with adrenal vein sampling; role of ACTH stimulation and cortisol assessment to document accuracy of catheter location.
29. Understand algorithm and dosing of preoperative preparation/blockade for pheochromocytoma
30. Be familiar with medications that can alter interpretation of catecholamines (i.e. antidepressants, Tylenol, etc)
31. Demonstrate normal thyroid anatomy in the operating room, including the thyroid gland, its vascular supply and venous drainage, the parathyroid glands, recurrent laryngeal nerves, strap muscles, and platysma.
32. Describe normal variants in recurrent laryngeal nerve anatomy including frequency.
33. Describe the impact of specific medications on the thyroid hormone synthetic pathway and thyroid function.
34. Outline appropriate thyroid function testing for the following clinical scenarios, including interpretation of predicted test results: Thyroid nodule, goiter, hyperthyroidism, hypothyroidism.
35. Develop an algorithm that includes pertinent history, examination findings, and diagnostic evaluation of: a palpable and nonpalpable thyroid nodules.
36. Describe the recognition, evaluation, and management of the following early postoperative complications: hematoma, hypocalcemia.
37. Describe the outpatient management of the following postoperative conditions: Thyroid hormone replacement, postoperative hypocalcemia, postoperative voice changes.
38. Outline algorithms for the evaluation, treatment and risk factors for : Well-differentiated thyroid cancer, medullary thyroid cancer, thyroid lymphoma, anaplastic thyroid cancer.
39. Outline algorithms for the evaluation and treatment of hyperthyroidism caused by : Graves' disease, toxic nodule
40. Describe the clinical presentation of thyroid storm and outline the treatment of thyroid storm.
41. Outline an algorithm for the evaluation and management of: nontoxic multinodular goiter, including substernal goiter with and without airway involvement.

42. Describe operative approaches to thyroid pathology
43. Outline the staging and prognosis in thyroid cancer
44. Recognition and treatment of common postoperative complications: Hematoma, hypocalcemia, thyroid storm, voice changes
45. Familiarization with how cancer is diagnosed and the information that is clinically applicable from the definite histologic diagnosis of any given cancer.
46. Recognition of co-morbid diseases, as cancer so often strikes the elderly.
47. Understand the work-up of co-morbidities, including the utilization of colleagues in Anesthesiology, Cardiology, and Radiology to minimize and better quantitate these co-morbid factors.
48. In close rapport with the pathologists, appreciate the various strategies necessary to obtain tissue for diagnosis:
 49. needle biopsy
 50. true-cut biopsy
 51. stereotactic biopsy
 52. incisional biopsy
 53. excisional biopsy
54. Understand the very real risk factors of implantation of central venous lines:
 55. hemothorax
 56. pneumothorax
 57. eccentric line placement

PGY 4

All of the above, plus:

1. Outline the complete evaluation and management of patients with parathyroid cancer
2. Describe in detail the different techniques of focused parathyroidectomy including: Mini incision open, radioguided, video-assisted and endoscopic approaches.
3. Outline the complete evaluation and management of recurrent or persistent hyperparathyroidism, including imaging studies and selective venous sampling.
4. Describe the treatment pathway for MEN 1 and 2A patients, including the order in which the different manifestations should be treated.
5. Describe the surgical approaches to pheochromocytoma.
6. Review all the surgical options/approaches for adrenalectomy and the indications for each.
7. Describe the intraoperative management of patients with pheochromocytoma during surgery regarding anesthetic management, surgical technique, and pre and postoperative care.
8. Identify the distinguishing characteristics of paragangliomas.
9. Describe the evaluation and treatment of multiple endocrine neoplasia type 2 syndrome in a patient with adrenal lesions.
10. Describe the treatment options for a patient with malignant pheochromocytoma.
11. Identify the steps for a safe and successful right and left laparoscopic transabdominal adrenalectomy. Be familiar with operative technique (positioning, steps of the operation)

12. Be familiar with common complications following adrenalectomy and ways to avoid them. Understand indications and technique of subtotal adrenalectomy
13. Have an understanding of intraoperative medical management of adrenergic crisis.
14. Outline the complete evaluation and management of patients with thyroid cancer (papillary, follicular, medullary, anaplastic) including: Preoperative evaluation including radiographic studies, operative approaches including discussion of lobectomy vs. total thyroidectomy, indications for and extent of neck dissection, incidental finding of cancer in resected specimen, metastatic thyroid cancer, large remnant in patient with thyroid cancer, postoperative treatment, surveillance, and monitoring
15. Outline the complete evaluation and management of nontoxic multinodular goiter and substernal goiter
16. Describe approaches for reoperative thyroid surgery
17. Describe the management of intraoperative recurrent nerve injury
18. Understand the role of surgery in the diagnosis of breast cancer. A major responsibility is in the acquisition of tissue for exact histological diagnosis.
19. Heightened knowledge how much tissue is required for diagnosis of breast cancer, how it should be presented to the various laboratories that may be needed in determining the diagnosis for a specific type of lymphoma.
20. Be aware of the cancers wherein the primary treatment is a definitive surgical procedure.
21. Understand in which other cancers there are effective adjuvant modalities which may decrease the magnitude of surgery.
22. Be aware of the situations in which surgery for palliation may be indicated.
23. Understand surgical resection of metastatic disease with curative intent.
24. Understand how surgery can prevent cancer:
25. multiple endocrine neoplasia
26. ductal carcinoma in situ of the breast

Interpersonal Communication Skills

In patients undergoing 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. preoperative counseling of an extremely anxious patient with pancreatic mass of undetermined nature despite maximal preoperative work-up
 - b. patient referred for management of soft tissue sarcoma of the extremity that had an attempted excisional biopsy done in such a manner that severely

compromised the resectability of the tumor and the functionality of the limb after resection

Professionalism

While caring for patients undergoing surgery for cancer:

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.
6. Maintain confidentiality of patient information.
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. patient whose sister just died at the age of 30 from breast cancer desires prophylactic bilateral mastectomy despite having no other risk factors
 - b. patient with familial MEN refuses to tell other family members of the diagnosis, which would allow them to be screened for potentially life-saving prophylactic intervention

Practice-based Learning

For patients undergoing surgery for cancer:

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. stereotactic core biopsy vs needle localization biopsy in patients with abnormal findings on mammography

Systems-based Practice

For patients undergoing surgery:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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:
 - b requiring the evaluation of all patients with a suspected breast mass in a certified multispecialty breast care center

DUTIES AND RESPONSIBILITIES

ALL

1. Attend all teaching functions, including Surgery Basic Science Conference.
2. Maintain an outside reading program.
 1. Participate in Journal Club
2. Prepare a clinical subject for presentation or publication each year of their residency.
3. Participate in the in-house call schedule.

PGY 2

1. Work closely with recovery rooms and intensive care units on our population for any types of pulmonary distress, cardiac distress, septic shock, and initiate appropriate therapy.
2. Contact senior house officers or the attending for consultation as needed.
3. Work as a team player with the senior residents.
4. Come to the operating room having read about the breast disease afflicting the patient, the surgical strategy to be employed, and the expected outcome of the procedure accomplished.
5. Under the supervision of the attending surgeons, perform the various types of biopsies in the Ambulatory OR.
6. Assist in the management of inpatients on the Breast/Endocrine Surgery Service.
7. Assist in the placement of central lines.
8. Work closely as a member of the team responding to the direction of the chief resident and attending.

PGY 4

1. Supervise the Breast/Endocrine Surgery Service, including rounds, junior residents/students, operating room schedule, elective and add-on cases, and emergency cases.

2. Prompt and complete evaluation of all and any consults for Breast/Endocrine Surgery Service. The chief resident is expected to personally see all consults and to develop a treatment plan after evaluation and discussion with the attending surgeon on-call.
3. Participate in all main operating room cases and assign residents to other cases.
4. Organize and structure effective work and teaching rounds.
5. Assign junior residents and medical students to specific work/tasks/operations.
6. Assure completeness of documentation (progress notes, operation notes, discharge summaries, etc) in the patient's chart. The senior resident is expected to have an admission note and at least a pre-operative note in all charts of patients admitted to the Breast/Endocrine Surgery Service.

GASTROINTESTINAL SURGICAL ONCOLOGY

EDUCATIONAL GOALS

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

1. Exhibit a broad knowledge base, good judgement, and appropriate technical skills for the surgical treatment of cancer.
2. Appreciate the complex co-morbidities often associated with the patient with cancer.
3. Be aware of the limitations of surgery and the areas wherein the very best combination of surgery and other modalities has not been reached.

EDUCATIONAL OBJECTIVES

Patient Care Skills

PGY 1

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 the following:
 - a. counter-traction
 - b. suction
 - c. knot-tying
 - d. hemostasis
3. Become skillful with the following interventions:
 - a. nasogastric tubes
 - b. peripheral IV lines
 - c. central venous line
 - d. urinary bladder catheter

PGY 5

All of the above, plus:

4. Perform the various interventions necessary to obtain tissue for diagnosis:
 - a. needle biopsy
 - b. true-cut biopsy
 - c. stereotactic biopsy
 - d. incisional biopsy
 - e. excisional biopsy
5. Be able to document all the tissue required to produce the needed diagnosis has been obtained and delivered to the appropriate sources in the appropriate state.
6. Further competence in placing a central line with supervision, including knowing the purpose of the line and the type of line required:
 - a. antibiotics
 - b. chemotherapy
 - c. bone marrow transplant

7. 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 are ideally placed on protocol. Such patients should be enthusiastically identified.
8. Assist and/or perform major surgical resection for cancer in the operating room.

Medical Knowledge

PGY 1

4. Familiarization with how cancer is diagnosed and the information that is clinically applicable from the definite histologic diagnosis of any given cancer.
5. Recognition of co-morbid diseases, as cancer so often strikes the elderly.
6. Understand the work-up of co-morbidities, including the utilization of colleagues in Anesthesiology, Cardiology, and Radiology to minimize and better quantitate these co-morbid factors.
7. Appreciate the frailty of the population upon whom we are treating,
8. In close rapport with the pathologists, appreciate the various strategies necessary to obtain tissue for diagnosis:
 - a. needle biopsy
 - b. true-cut biopsy
 - c. stereotactic biopsy
 - d. incisional biopsy
 - e. excisional biopsy

PGY 5

All of the above, plus:

9. Clearly understand what acquired tissue should be examined freshly vs preserved and sent to special laboratories for special studies (e.g. lymphoma) and what material may safely be committed to formalin.
10. Understand the very real risk factors of implantation of central venous lines:
 - a. hemothorax
 - b. pneumothorax
 - c. eccentric line placement
11. Understand the role of surgery in the diagnosis of cancer. A major responsibility is in the acquisition of tissue for exact histological diagnosis.
12. Heightened knowledge how much tissue is required for diagnosis of cancer, how it should be presented to the various laboratories that may be needed in determining the diagnosis for a specific type of lymphoma.
13. Be aware of the cancers wherein the primary treatment is a definitive surgical procedure.
14. Understand in which other cancers there are effective adjuvant modalities which may decrease the magnitude of surgery.
15. Be aware of the situations in which surgery for palliation may be indicated.
16. Understand surgical resection of metastatic disease with curative intent.
17. Be aware of the possibility of curing up to 30% of patients with soft tissue and bony sarcomas and limited pulmonary metastases.

18. Be aware of the risks, advantages, and disadvantages of resecting hepatic metastases in patients with colo-rectal cancer.
19. Understand how surgery can prevent cancer:
 - a. colitis
 - b. polyposis coli

Interpersonal Communication Skills

In patients undergoing surgery for cancer:

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:
 - c. preoperative counseling of an extremely anxious patient with pancreatic mass of undetermined nature despite maximal preoperative work-up
 - d. patient referred for management of soft tissue sarcoma of the extremity that had an attempted excisional biopsy done in such a manner that severely compromised the resectability of the tumor and the functionality of the limb after resection

Professionalism

While caring for patients undergoing surgery for cancer:

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.
6. Maintain confidentiality of patient information.
7. Be able to obtain informed consent for planned interventions.
8. Demonstrate sensitivity and responsiveness to patient's culture, age, gender, and disabilities.

Practice-based Learning

For patients undergoing surgery for cancer:

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:
 - b. type preoperative diagnostic testing necessary for treatment of a suspected pancreatic cancer being considered for Whipple pancreaticoduodenectomy

Systems-based Practice

For patients undergoing surgery for cancer:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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. cost-benefit of routine hemocult testing for all patients during annual physical examination to detect colon cancer

DUTIES AND RESPONSIBILITIES

ALL

1. Attend all teaching functions, including Surgery Basic Science Conference.
2. Maintain an outside reading program.
3. Participate in Journal Club
4. Prepare a clinical subject for presentation or publication each year of their residency.
5. Participate in the in-house call schedule.

PGY 1

1. Work closely with recovery rooms and intensive care units on our population for any types of pulmonary distress, cardiac distress, septic shock, and initiate appropriate therapy.

2. Contact senior house officers or the attending for consultation as needed.
3. Work as a team player with the senior residents.
4. Come to the operating room having read about the cancer afflicting the patient, the surgical strategy to be employed, and the expected outcome of the procedure accomplished.
5. Under the supervision of the attending surgeons, perform the various types of biopsies in the Ambulatory OR.
6. Assist in the management of inpatients on the Oncology Surgery Service.
7. Assist in the placement of central lines.
8. Work closely as a member of the team responding to the direction of the chief resident and attending.

PGY 5

9. Supervise the oncology surgical service, including rounds, junior residents/students, operating room schedule, elective and add-on cases, and emergency cases.
10. Prompt and complete evaluation of all and any consults for oncology surgery. The chief resident is expected to personally see all consults and to develop a treatment plan after evaluation and discussion with the attending surgeon on-call.
11. Participate in all main operating room cases and assign residents to other cases.
12. Organize and structure effective work and teaching rounds.
13. Assign junior residents and medical students to specific work/tasks/operations.
14. Assure completeness of documentation (progress notes, operation notes, discharge summaries, etc) in the patient's chart. The senior resident is expected to have an admission note and at least a pre-operative note in all charts of patients admitted to the oncology surgery service.

TRANSPLANT SURGERY

EDUCATIONAL GOALS

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

1. Describe the evaluation of organ donors.
2. Describe the immunologic basis of graft rejection.
3. Describe the indications, contraindications, and selection of patients for transplantation.
4. Describe operations for harvest and transplantation of kidneys, liver, and pancreas.
5. Describe the postoperative management after transplantation, including immunosuppression.
6. Describe the diagnosis and treatment of organ transplant graft rejection.

EDUCATIONAL OBJECTIVES

Patient Care Skills

PGY 1

1. The different types of access procedures and their utility.
2. Learn the fundamentals of local anesthesia techniques.
3. Learn the basics of vascular surgical techniques.
4. Learn the basic techniques of inserting a peritoneal dialysis catheter.
5. Learn the medical management of electrolyte abnormalities with special reference to preoperative preparation and postoperative management.
6. Be able to recognize complications of access procedures (e.g., infection, ischemia, etc)

PGY 3

All of the above, plus:

1. Demonstrate a working knowledge of indications, techniques, and management of liver and pancreas transplants.
2. Management of immunosuppression.
3. Diagnosis and management of opportunistic infections.
4. Demonstrate familiarity with the operative technique for renal transplants.
5. ICU care and postoperative management of liver, kidney, and pancreas transplants.
6. Biopsy to diagnose organ rejection.

Medical Knowledge

PGY 1

EVALUATION OF DONOR

1. Diagnosis of brain death
2. Contraindications to organ donation

3. Consent process
4. Principles of organ preservation
5. Process of organ retrieval

TRANSPLANTATION

1. Understand the immunologic basis of graft rejection.
2. Diagnosis of end stage kidney and liver disease.
3. Indications, contraindications, and selection of patients for transplantation.
4. Preoperative preparation of recipients.
5. Types of immunosuppressive drugs used and their indications.
6. Effects of immunosuppression and its complications.
7. Understand the interaction of drugs with immunosuppressive agents.
8. Have a basic understanding of post transplant immunosuppression.
9. Have a basic understanding of diagnosis of rejection and its management.

END STAGE RENAL DISEASE

7. Have a basic understanding of the different treatment options for a patient with end stage renal disease.
8. Indications for vascular access procedures.
9. Indications for peritoneal dialysis.
10. Understand the metabolic and electrolyte abnormalities in ESRD.

PGY 3

All of the above, plus:

1. Thorough familiarity with the use of immunosuppressive drugs including OKT3, ATGAM, and FK506.
2. Diagnosis of rejection.

Interpersonal Communication Skills

In patients undergoing organ transplantation:

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. young adolescent male patient is clinically brain dead after a motor vehicle accident, but family continues to insist life support be maintained
 - b. patient needing renal transplant has a sister who would be a three antigen match, but does not wish to donate despite family pressure

Professionalism

While caring for patients undergoing organ transplantation:

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.
6. Maintain confidentiality of patient information.
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. liver transplantation for an alcoholic, cirrhotic patient who only stopped drinking 4 weeks before
 - b. patient with familial MEN refuses to tell other family members of the diagnosis, which would allow them to be screened for potentially life-saving prophylactic intervention

Practice-based Learning

For patients undergoing organ transplantation:

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. role of isolated pancreas transplant in the management of chronic, end-stage diabetes
 - b. potential benefit of preoperative multiple blood transfusion in reducing organ rejection

Systems-based Practice

For patients undergoing organ transplantation:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Be able to discuss the current methods for organ allocation including need, availability, and philosophical biases for organ donation.
3. Explain the UNOS method for assigning organs to patients.

4. Describe how Lifepoint functions to maximize the donor pool, facilitate harvesting and distribution of organs.
5. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
6. Practice cost-effect health care that does not compromise patient care.
7. Understand the responsibility of the surgeon in managing indigent patients.
8. Direct patients and their families towards individuals within the Institution that can help them with understanding complex issues of societal support and resources.
9. Understand an awareness of the role of health care managers and surgeon-extendors in the surgical management of patients.
10. Advocate for quality patient surgical care.
11. Demonstrate awareness of the costs associated with providing care to patients.
12. Be prepared to discuss the interplay of the competing societal and patient needs in the following example situations:
 - a. living-related renal transplantation in a 70 year old patient with two vessel coronary artery disease
 - b. use of limited supply of cadaveric livers for patients with chronic hepatitis C as a cause of liver failure

DUTIES AND RESPONSIBILITIES

ALL

1. Attend all teaching functions, including Surgery Basic Science Conference.
2. Maintain an outside reading program.
3. Participate in Journal Club
4. Participate in the Transplant Surgery Service call schedule.

PGY 1

1. Provide the inpatient care for patients admitted to the Transplant Surgery Service.
2. Contact senior house officers or the attending for consultation as needed.
3. Work as a team player with the senior residents.

PGY 2

1. Under the supervision of the attending surgeons, perform the various types of hemodialysis access procedures in the Ambulatory OR.
2. Assist in the management of inpatients on the Transplant Surgery Service.
3. Assist the PGY 1 in acquiring skills of patient care already mastered by the PGY 2.
4. Assist in the placement of central lines.
5. Work closely as a member of the team responding to the direction of the PGY 3, transplant fellows, and attending.

PGY 3

1. Supervise the Transplant Surgical Service, including rounds, junior residents/students, operating room schedule, elective and add-on cases, and emergency cases.

2. Prompt and complete evaluation of all and any consults for Transplant Surgery. The PGY 3 is expected to personally see all consults and to develop a treatment plan after evaluation and discussion with the attending surgeon on-call.
3. Participate in main operating room cases and assign residents to other cases.
4. Organize and structure effective work and teaching rounds.
5. Assign junior residents and medical students to specific work/tasks/operations.
6. Assure completeness of documentation (progress notes, operation notes, discharge summaries, etc) in the patient's chart.

TRAUMA / SURGICAL CRITICAL CARE
NIGHT EMERGENCY / TRAUMA SURGERY

EDUCATIONAL GOALS

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

1. Manage the evaluation and treatment of the injured patient.
2. Care for the critically ill surgical patient in an intensive care unit setting.

EDUCATIONAL OBJECTIVES

Patient Care Skills

PGY 1 (Surgical Critical Care)

1. Deal effectively with acute cardiovascular collapse and arrest.
2. Place an arterial line and set up monitoring.
3. Place a central venous line and set up monitoring.
4. Place a Swan-Ganz catheter and set up monitoring.
5. Place a pulse oximeter on a patient.
6. Place and set up chest tubes.
7. Perform tracheostomy and percutaneous endoscopic gastrostomy with appropriate supervision and assistance.
8. Be competent in the daily management of critically ill patients.

PGY 1 (Trauma)

1. Perform an accurate physical assessment identifying all injuries during the secondary survey portion of trauma resuscitation.
2. Carry out the day-to-day management of the trauma patient outside the ICU setting with appropriate supervision.
3. Immobilize extremity fractures.
4. Place a central venous catheter into the subclavian vein.
5. Place a nasogastric tube or orogastric tube as indicated.
6. Place a Foley catheter rapidly while maintaining sterile technique.
7. Dress open wounds.
8. Apply and remove a cervical spine collar.
9. Place a chest tube.
10. Identify common and/or potentially dangerous injuries on radiographic imaging studies.
11. Suture minor wounds.
12. Measure muscle compartment pressure.

PGY 4

All of the above, plus:

1. Perform medical control in the pre-hospital arena for trauma patients.
2. Perform an efficient, accurate, and complete exploratory laparotomy for abdominal trauma.

3. Appropriately prioritize the diagnosis and management of multiple injuries in a single patient.
4. Perform a rapid and efficient primary survey, resuscitation, and secondary survey of multiply-injured patients in as safe and rapid a manner as possible.
5. Make appropriate and efficient use of trauma center MD's, nurses, and ancillary personnel to expedite care of the multiply injured patient and rapidly manage their resuscitation and evaluation.

Medical Knowledge

PGY 1/2 (Surgical Critical Care)

1. Be able to describe the commonly used modes of artificial ventilation and the differences between them.
2. Be able to describe how PEEP, FIO₂, Vt, and Rate affect the physiology of gas exchange.
3. Be familiar with the actions, indications, contraindications, and dosages for commonly used inotropic, chronotropic, and antiarrhythmic agents.
4. Understand the use, interpretation, and maintenance of commonly used physiologic monitoring devices and the indications, contraindications, and complications of their use.
5. Understand the principles of management of closed head injury.
6. Be comfortable with the management of fluids and electrolytes.
7. Understand the pathophysiology of acute renal failure, its complications, the indications for dialysis, available modes of dialysis, and management of patients with acute renal failure or acute renal insufficiency.
8. Understand the pathophysiology of ARDS and the management of these patients.
9. Be able to discuss the pathophysiology of the Systemic Inflammatory Response Syndrome and its relationship to Multiple Organ Dysfunction Syndrome and Multiple Organ Failure.
10. Understand the principles of surgical infection and antimicrobial treatment in the ICU.
11. Understand the nutritional requirements of the critically ill patient and the means available to provide nutritional support.
12. Understand the management and causes of coagulopathy and hemorrhage in the ICU.
13. Know the function (but do not manipulate) each control on the ventilators most commonly used in the ICU.
14. Understand the means available to identify and treat as well as to minimize complications in the critically ill patient including PE, stress ulceration, decubiti, secondary infection, barotrauma, and deep venous thrombosis.
15. Understand the principles of hemodynamic management in the critically ill patient.

PGY 1/2 (Trauma)

1. Be able to discuss methods of diagnosis for all injuries commonly encountered in the multiply injury patients.

2. Be able to discuss the various methods available to evaluate the potentially injured abdomen including the indications and contraindications as well as the advantages and disadvantages of each.
3. Be able to discuss recognition and treatment of hypovolemic shock.
4. Be able to discuss recognition, treatment, and severity quantification of acute closed head injury as well as recognition of injuries requiring operative intervention.
5. Be able to discuss diagnosis of acute thoracic injuries and definitive treatment of those not requiring operative intervention.
6. Be aware of the techniques used to temporarily immobilize fractures.
7. Be aware of the techniques to protect the cervical, thoracic, and lumbar spine.
8. Understand the use of commonly encountered EMS equipment.
9. Understand the concept of multi-disciplinary trauma care.
10. Know and understand the indications and contraindications to Foley catheter placement and nasogastric tube placement in the injured patient.
11. Know the methods used to achieve optimum radiographic assessment of the injured patient.
12. Be able to discuss the complications of common fractures and other common injuries.
13. Understand the long term physical and social effects of major injuries.

PGY 2/4

All of the above, plus:

1. Be able to discuss appropriate requirements of stabilization prior to transfer.
2. Have a complete understanding of the diagnosis, initial management, and definitive care for all injuries encountered in a general surgical practice.

Interpersonal Communication Skills

In injured and critically ill patients:

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. Spanish-speaking patient (no English ability) comes in with 18 hours of severe right upper quadrant pain, hypotensive but conscious
 - b. quadriplegic patient on a ventilator in the intensive care unit, awake and alert, with likely temporary renal failure that requires dialysis, but has an advanced directive but no family

Professionalism

While caring for injured and critically ill patients:

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.
6. Maintain confidentiality of patient information.
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. homeless patient with cocaine addiction, poor hygiene, and non-healing wound of the thigh has now been in emergency department on three occasions, but each time has left against medical advice once he has gotten pain medication
 - b. while under sedation for procedure and concerned that he may not survive hospitalization, trauma patient admits to having committed capital crime, but asks that you not tell anyone unless he dies

Practice-based Learning

For injured and critically ill patients:

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.
3. Know how to calculate Injury Severity Score, understand its role in outcome prediction, realize its importance for patient group comparison in trauma research.
7. Be prepared to describe how to obtain relevant information to support patient management in the following example situations:
 - a. whether to request prophylactic placement of a Greenfield filter the severely-injured patient
 - b. whether to perform arteriography patient with penetrating injury to the thigh, but no hard or soft signs of arterial injury other than proximity

Systems-based Practice

For patients injured and critically ill patients:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Understand the concept of field triage and be aware of the criteria recommended by the American College of Surgeons.
3. Understand the differences in capabilities among the various levels of pre-hospital care.
4. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
5. Practice cost-effect health care that does not compromise patient care.
6. Understand the responsibility of the surgeon in managing indigent patients.
7. Direct patients and their families towards individuals within the Institution that can help them with understanding complex issues of societal support and resources.
8. Understand an awareness of the role of health care managers and surgeon-extendors in the surgical management of patients.
9. Advocate for quality patient surgical care.
10. Demonstrate awareness of the costs associated with providing care to patients.
11. Be prepared to discuss the interplay of the competing societal and patient needs in the following example situations:
 - a. incarcerated, indigent patient with colostomy after colon injury wishes this to be taken down before he is released from prison
 - b. emergency room physician on other side of state wishes to transfer multipli-injured indigent patient to your facility, although you know that the resources are available at the referring facility to care for the patient there

DUTIES AND RESPONSIBILITIES

ALL

1. Attend all teaching functions, including Surgery Basic Science Conference
2. Maintain an outside reading program.
3. Participate in Journal Club
4. Participate in the in-house surgical call schedule.

PGY 1/2 (Surgical Critical Care)

1. Provide the ICU care for patient in the STICU/NICU in conjunction with the attending surgical service, the corresponding surgical attending, and the Surgery/Anesthesia Critical Care attending.
2. Assist/perform the following under supervision when indicated:
 - a. central venous line and set up monitoring
 - b. Swan-Ganz catheter and set up monitoring
 - c. pulse oximeter
 - d. thoracostomy tubes
 - e. tracheostomy
 - f. percutaneous endoscopic gastrostomy

PGY 1/2 (Trauma)

1. Provide the inpatient care for patients admitted to the Trauma Surgery Service.
2. Contact senior house officers or the attending for consultation as needed.

1. Work as a team player with the senior residents.
2. Work closely as a member of the team responding to the direction of the PGY 4 and attending.

PGY 2/4

1. Supervise the Trauma Surgical Service, including rounds, junior residents/students, operating room schedule, elective and add-on cases, and emergency cases.
2. Prompt and complete evaluation of all and any consults for Trauma Surgery. The PGY 4 is expected to personally see all consults and to develop a treatment plan after evaluation and discussion with the attending surgeon on-call.
3. Participate in main operating room cases and assign residents to other cases.
4. Organize and structure effective work and teaching rounds.
5. Assign junior residents and medical students to specific work/tasks/operations.

UROLOGY

EDUCATIONAL GOALS

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

1. Have a basic understanding of management of a variety of urologic conditions suitable for a non-urologist surgeon.
2. Describe human genitorurinary anatomy and related regional anatomy.
3. Assess patient's urologic pathology using appropriate skills in history-taking and clinical examination.

EDUCATIONAL OBJECTIVES

Patient Care Skills

1. Evaluate patients for urological diseases
2. Demonstrate competence in basic urologic surgical techniques, including:
 - a. knot tying
 - b. exposure and retraction
 - c. performance of preoperative assessment and postoperative care of patients undergoing urological surgery.

Medical Knowledge

1. Understand human genitourinary anatomy and related regional anatomy.
2. Understand the anatomy, pathology, and pathophysiology of the kidney, ureter, bladder, prostate, testicles, penis, and the male and/or female urethra.
3. Understand the pathophysiology, clinical manifestations, and therapeutic options of specific urologic conditions including:
 - a. urinary obstruction
 - b. urinary stone
 - c. hematuria
 - d. renal, bladder, prostate masses and/or tumors
 - e. urinary incontinence
4. Understand principles for the preoperative assessment and postoperative care of patients undergoing urologic surgical procedures.
5. Understand the pathophysiology of specific clinical symptoms including:
 - a. difficult voiding and urinary retention
 - b. anuria
 - c. urinary incontinence
 - d. hematuria
 - e. abdominal masses
 - f. genital swellings and/or masses
 - g. flank pain or colic

Interpersonal Communication Skills

In patients undergoing urologic 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 postoperative urinary retention refuses to perform intermittent self catheterization in order to be able to be discharged home
 - b. parents of a patient with incomplete hypospadias insist on surgical correction, while 14 year old patient is unwilling to undergo operation

Professionalism

While caring for patients undergoing urologic 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.
6. Maintain confidentiality of patient information.
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. male patient with sexually-transmitted disease refuses to inform sexual partners or wear a condom
 - b. male prisoner with conjugal rights wishes to undergo reversal of previous vasectomy at state expense

Practice-based Learning

For patients undergoing urologic 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. radiation vs radical prostatectomy for patients with asymptomatic localized prostate cancer
 - b. microwave vs standard transurethral resection of the prostate for benign prostatic hypertrophy

Systems-based Practice

For patients undergoing urologic:

1. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
2. Practice cost-effect health care that does not compromise patient care.
3. Understand the responsibility of the surgeon in managing indigent patients.
4. Direct patients and their families towards individuals within the Institution that can help them with understanding complex issues of societal support and resources.
5. Understand an awareness of the role of health care managers and surgeon-extendors in the surgical management of patients.
6. Advocate for quality patient surgical care.
7. Demonstrate awareness of the costs associated with providing care to patients.
8. Be prepared to discuss the interplay of the competing societal and patient needs in the following example situations:
 - a. Medicare decides to limit coverage of the cost of sildenafil citrate for patients with impotence
 - b. screening PSA in addition to prostate examination according to ACS/AUA guidelines

DUTIES AND RESPONSIBILITIES

1. Attend morning and afternoon work rounds.
2. Write orders and complete daily assigned tasks; sign all verbal orders given.
3. Provide ward coverage for inpatients and write daily progress notes; co-sign student notes.
4. Work-up patients on the Urology Service (inpatients and same-day admissions).
5. Provide direct patient evaluation, assessment, and communicate with more senior persons for problems.
6. Interact with and instruct medical students.
7. Participate in call schedule as assigned.
8. Attend outpatient clinics as assigned.

9. Attend the following conferences:
 - a. Grand Rounds / Pyelogram Hour, Tuesday 7:30 am
 - b. Preoperative Conference, Thursday 5 pm
 - c. Monthly Mortality and Morbidity Conference, as announced
 - d. Surgery Basic Science Lecture

VASCULAR SURGERY

EDUCATIONAL GOALS

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

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 Skills

PGY 1

1. Evaluate patients for vascular disease.
1. Demonstrate competence in basic surgical techniques, including:
 - a. knot-tying
 - b. exposure and retraction
3. Participate in amputations with specific attention to demarcation levels.
4. Demonstrate proficiency in venous access procedures.
5. Perform the preoperative assessment and postoperative care of patients undergoing major vascular procedures.

PGY 2

All of the above, plus:

2. Demonstrate skill in basic surgical techniques, including:
 - a. knowledge of instrumentation
 - b. incisions
 - c. closure of incisions
 - d. handling of graft material
3. 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
4. Participate in amputations with specific attention to control of toxicity
5. Demonstrate the ability to perform arterial access or arterio-venous access, including:
 - a. incisions
 - b. closure of incisions
 - c. thrombectomy and revision

PGY 5

All of the above, plus:

1. Obtain vascular control of diseased or traumatically occluded blood vessels using:
 - a. vascular clamps

- b. vessel loop / Rummel tourniquet
- c. balloon occlusion
- d. digital compression
2. Participate in thrombendarterectomy and thrombectomy/thromboembolectomy
3. Demonstrate appropriate vascular suture techniques.
4. Evaluate and manage sympathectomy procedures
5. Demonstrate the appropriate incisions and exposure of:
 - a. abdominal aorta and its major branches
 - b. portal venous system
 - c. peripheral arterial system
 - d. carotid arterial system
 - e. arteriovenous fistula
6. Obtain vascular control of major vessels:
 - a. aorta
 - b. vena cava
7. Participate in endarterectomy and bypass grafting.
8. Demonstrate ability to manage graft and suture materials.
9. Perform selected operative procedures or selected parts of the following operative procedures under supervision:
 - a. aortic aneurysm repair
 - b. carotid endarterectomy
 - c. aorto-iliac occlusive disease
 - d. femoral-popliteal occlusive disease
 - e. correction of portal hypertension
 - f. peripheral vascular trauma
10. Discuss and demonstrate the role of adjunctive measures in operative procedures including angiography, thrombolytic therapy, and video-assisted procedures.
11. Select and use proper advanced techniques in managing patients with a variety of vascular disorders such as:
 - a. ruptured aortic aneurysm
 - b. central vascular trauma
 - c. suprarenal aortic aneurysm
 - d. renovascular hypertension
 - e. femoral tibial bypasses
12. Perform alternative methods of bypass grafting such as:
 - a. extra-anatomic bypass, principles and techniques
 - b. indirect revascularization
 - c. *in situ* techniques
 - d. sequential and composite techniques
13. Manage prosthetic graft infections to include:
 - a. diagnosis
 - b. selection of alternate routes for revascularization
 - c. selection of appropriate graft materials
 - d. timing of intervention
14. Manage complications of common major vascular procedures such as:
 - a. carotid endarterectomy

- b. aortic reconstruction
- c. lower extremity vascular reconstruction

Medical Knowledge

PGY 1

1. Describe human arterial and venous anatomy and related regional anatomy.
2. Describe basic arterial and venous hemodynamics.
3. Discuss the anatomy, pathology, and pathophysiology of the arterial wall.
4. Assess patients' vascular systems using appropriate skills in history-taking and clinical exam.
5. Describe life-threatening signs of vascular disease and indicate when immediate intervention is required.
6. 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
7. 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
8. Discuss basic principles of Doppler ultrasound for performing bedside arterial and venous Doppler testing.
9. 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
10. Outline the principles of care for ischemic limbs
11. Summarize principles for the preoperative assessment and postoperative care of patients undergoing major vascular surgical procedures.
12. Outline the fundamental elements of nonoperative care of the vascular patient, including the role of risk assessment and preventative measures.
13. 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
14. Explain the concept of critical arterial stenosis
 15. Differentiate between acute arterial and acute deep venous occlusion.
 16. Determine a plan for assessment of operative risk in these categories:
 - a. cardiac
 - b. pulmonary
 - c. renal
 - d. metabolic
 - e. levels of anesthetic risk

PGY 2

All of the above, plus:

1. 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
2. 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
3. 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

4. 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
5. Describe the role of anticoagulant agents, including antiplatelet agents, in the management of patients with vascular disease.
6. Analyze the role of the endothelium in atherosclerosis, thrombosis, and thrombolysis.
7. Discuss the principles of and contraindications for anticoagulation and thrombolytic therapy.
8. Describe the surgically correctable causes of hypertension and their diagnostic modalities.
9. Discuss the mechanics of action and the therapeutic role of the following pharmacologic types of agents:
 - a. vasopressors
 - b. vasodilators
 - c. adrenergic blocking agents
 - d. anticoagulants
 - e. antiplatelet agents
 - f. thrombolytics
10. Demonstrate knowledge of the general principles of vascular surgical technique including:
 - a. vascular control and suturing
 - b. endarterectomy
 - c. angioplasty
 - d. bypass grafting
11. Discuss clotting factors and how they interact including hypercoagulable states and coagulopathies.
12. 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

PGY 5

All of the above, plus:

1. Describe the basic clinical manifestations of congenital vascular disease.
2. Summarize the etiology, diagnosis, and therapeutic options of specific categories of vascular disease:
 - a. arterial disease
 - i. inflammatory vascular disease and vasculitis
 - ii. arteriovenous fistulas or malformations
 - iii. neurovascular compression syndromes (thoracic outlet)

- b. miscellaneous
 - i. tumors
 - ii. sympathetic nervous system (causalgia, reflex sympathetic dystrophy)
3. Discuss the principles of angiography to include the following considerations:
 - a. indications and complications
 - b. principles and techniques of intraoperative angiography
 - c. principles and techniques of emergency room angiography
4. Differentiate between different operative approaches to the vascular system to include:
 - a. incisions and exposure
 - b. handling of vascular tissues
 - c. principles of vascular bypass grafting
 - d. emergency vascular surgery
 - e. reoperative vascular surgery
 - f. principles of endarterectomy
5. Illustrate the operative exposure of the major vessels, including:
 - a. aortic arch
 - b. proximal subclavian
 - c. carotid artery
 - d. descending thoracic aorta
 - e. suprarenal aorta
 - f. infrarenal aorta
 - g. femoral artery
 - h. popliteal artery
6. Outline the indications for operations for claudication, abdominal aortic aneurysm, carotid stenosis, and amputation.
7. Describe the indications for balloon angioplasty and vascular stent placement with risks and complications.
8. Describe the pathogenesis and complications of aneurysmal disease.
9. Summarize the etiology, microbiology, and treatment of diabetic foot infection.
10. Categorize the prevention and management of operative and postoperative complications, including graft infections, ischemic bowel, graft thrombosis, and extremity ischemia.
11. Outline the manifestation of failing peripheral vascular grafts.
12. Discuss the principles of reoperative vascular surgery.
13. Outline procedure for managing vascular surgical emergencies such as acute tissue ischemia or major hemorrhage (traumatic or ruptured aneurysm).
14. Demonstrate a basic knowledge of the various types of graft and suture material available.
15. Analyze alternative measures for the diagnosis and management of renovascular hypertension.
16. Discuss alternative operative procedures for the management of portal hypertension.
17. Summarize the surgical techniques available for managing the following vascular disorders:
 - a. abdominal aortic bypass or aneurysmectomy/aneurysmorrhaphy

- b. carotid stenosis
 - c. femoral-popliteal occlusion
 - d. tibial arterial occlusion
18. Analyze the management of complex vascular problems considering the following factors:
- a. morbidity and mortality
 - b. advanced surgical techniques
 - i. endoscopy
 - ii. microvascular techniques
 - iii. endoluminal grafting
21. Outline the management of prosthetic graft infections, including:
- a. diagnosis
 - b. use of alternate routes for revascularization
 - c. use of alternative graft materials
22. Summarize complications of common major vascular procedures such as:
- a. carotid endarterectomy
 - b. aortic reconstruction
 - c. lower extremity vascular reconstruction

Interpersonal Communication Skills

In patients with vascular disease:

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:
 - c. patient's referring doctor has told patient that his aortic aneurysm is a "time bomb", but in fact it is too small to offer repair
 - d. patient's family refuses to assume at home care after operation, but refuses to allow patient to be transferred to a long term care facility

Professionalism

While caring for patients with vascular disease:

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.
6. Maintain confidentiality of patient information.

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:
 - c. patient with lower extremity claudication who refuses to stop smoking, but demands intervention
 - d. patient's family insists that the patient be told that he must undergo carotid endarterectomy for asymptomatic stenosis, but patient does not want any operation

Practice-based Learning

For patients with vascular disease:

8. Develop a method to record and track over time the results of intervention performed by the resident.
9. Be involved in the teaching of students and more junior residents and colleagues.
10. Present patients for discussion during rounds and seminars, with appropriate literature references to support planned intervention.
11. Understand the role of study design and the use/misuse of statistical analysis in review the results of published research in this surgical field.
12. Demonstrate the ability to use information systems to obtain pertinent information regarding surgical issues and problems.
13. Use information technology to manage and provide patient-related information.
14. Be prepared to describe how to obtain relevant information to support patient management in the following example situations:
 - c. high risk patient with large (8 cm) abdominal aortic aneurysm
 - d. role of carotid angioplasty in the management of carotid artery disease

Systems-based Practice

For patients with vascular disease:

1. 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
2. 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
- 3. Understand the role of a tertiary referral center in the surgical management of simple and complex problems.
- 4. Practice cost-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
- 6. Practice cost-effect health care that does not compromise patient care.
- 7. Understand the responsibility of the surgeon in managing indigent patients.
- 8. Direct patients and their families towards individuals within the Institution that can help them with understanding complex issues of societal support and resources.
- 9. Understand an awareness of the role of health care managers and surgeon-extendors in the surgical management of patients.
- 10. Advocate for quality patient surgical care.
- 11. Explain the risk:reward ratios of surgical care for patients with vascular disease.
- 12. Demonstrate awareness of the costs associated with providing surgical care to patients with vascular disorders.
- 13. Be prepared to discuss the interplay of the competing societal and patient needs in the following example situations:
 - g. routine renal artery arteriography in patients undergoing cardiac catheterization
 - h. serial screening carotid duplex ultrasound for all patients at risk of having systemic atherosclerosis

DUTIES AND RESPONSIBILITIES

ALL

1. Attending daily AM and PM work rounds.
2. Interact with and instruct medical students.
3. Participate in in-house call schedule as assigned.
4. Attend outpatient clinic as assigned.
5. Attend following conferences:
 - a. Vascular Conference, Wednesday 8 am
 - b. Grand Rounds, Tuesday 7 am
 - c. Surgical M and M Conference, Tuesday 4 pm
 - d. Basic Science Lecture, Tuesday 5 pm
 - e. Journal Club

PGY 1

1. Write orders and complete daily assigned tasks. Sign all verbal orders given.
2. Provide ward coverage for inpatients and write daily progress notes. Co-sign student notes.
3. Work up patients on the Vascular Service (inpatients and same day admissions).
4. Provide direct patient evaluation, assessment, and communicate with more senior person for problems.

PGY 2

1. Assist PGY 1 in completing ward work, orders, and work-ups.

2. Assume primary responsibility for managing ICU patients in conjunction with ICU service including orders and daily progress notes.
3. Complete initial evaluation of inpatient consults prior to presentation to chief resident or attending.
4. Organize and run vascular conference.
5. Assure ICU/ACU beds are available postop as appropriate.

PGY 5

1. Oversee evaluation and daily management of all vascular patients.
2. Participate in major vascular reconstructions as primary surgeon or assistant.
3. Communicate directly with attending regarding patient findings and care plans.
4. Insure appropriate informed consent is obtained and communicate with patient families as appropriate.
5. Communicate with nursing service representatives regarding daily management and discharge planning.
6. Coordinate availability of ICU/ACU beds with assistance of PGY 2.
7. Provide daily instruction on patient care and evaluation to medical students.
8. Accomplish operative reports as primary surgeon within 24 hours.
9. Assign other administrative tasks to more junior residents as appropriate.

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

PGY 1

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.

PGY 3

All of the above, plus:

1. Evaluate or review the evaluation of all consults and referred patients who are scheduled to undergo surgery.
2. Perform exploratory laparotomy for acute abdominal conditions requiring surgery.
3. 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
4. Perform esophagoduodenoscopy, colonoscopy, and rigid proctoscopy.
 5. Perform bowel resections with both stapled and hand-sewn anastomoses.
 6. Diagnose and manage complications such as:
 - g. anastomotic leaks
 - h. infection/abscesses
 - i. hematomas
 - j. wound dehiscence/evisceration
 - k. incidental or unexpected findings at laparotomy
 - l. iatrogenic injury to the bowel, bladder, ureter, spleen, or other organs during a laparotomy
 7. Perform local anesthesia (7 steps) for inguinal herniorrhaphy.
 8. Demonstrate the ability to teach junior residents the techniques of inguinal, femoral, and incisional herniorrhaphy.
 9. Assist and supervise junior residents in performing minor procedures, including central lines.
 10. Perform laparoscopic procedures, such as cholecystectomy, CBD exploration, Nissen fundoplication.
 11. Learn the basic techniques of inserting a peritoneal dialysis catheter.
 12. Demonstrate skill in basic vascular surgical techniques, including:
 - a. knowledge of instrumentation
 - b. incisions
 - c. closure of incisions
 - d. handling of graft material
 13. 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
 14. Demonstrate the ability to perform arterial access or arterio-venous access, including:
 - a. incisions
 - b. closure of incisions
 - c. thrombectomy and revision
 15. Demonstrate proficiency in venous access procedures.

16. Learn the medical management of electrolyte abnormalities with special reference to preoperative preparation and postoperative management.
17. Be able to recognize complications of access procedures (e.g., infection, ischemia, etc)

PGY 5

All of the above, plus:

1. Obtain vascular control of diseased or traumatically occluded blood vessels using:
 - a. vascular clamps
 - b. vessel loop / Rummel tourniquet
 - c. balloon occlusion
 - d. digital compression
2. Participate in thrombendarterectomy and thrombectomy/thromboembolectomy
3. Demonstrate the appropriate incisions, exposure, and vascular control of:
 - a. abdominal aorta and its major branches
 - b. portal venous system
 - c. peripheral arterial system
 - d. carotid arterial system
4. Participate in endarterectomy and bypass grafting.
5. Perform selected operative procedures or selected parts of the following operative procedures under supervision:
 - a. aortic aneurysm repair
 - b. carotid endarterectomy
 - c. aorto-iliac occlusive disease
 - d. femoral-popliteal occlusive disease
 - e. correction of portal hypertension
 - f. peripheral vascular trauma
6. Discuss and demonstrate the role of adjunctive measures in operative procedures including angiography, thrombolytic therapy, and video-assisted procedures.
7. Select and use proper advanced techniques in managing patients with a variety of vascular disorders such as:
 - a. ruptured aortic aneurysm
 - b. central vascular trauma
 - c. suprarenal aortic aneurysm
 - d. renovascular hypertension
 - e. femoral tibial bypasses
8. Perform alternative methods of bypass grafting such as:
 - a. extra-anatomic bypass, principles and techniques
 - b. indirect revascularization
 - c. *in situ* techniques
 - d. sequential and composite techniques
9. Manage prosthetic graft infections to include:
 - a. diagnosis
 - b. selection of alternate routes for revascularization
 - c. selection of appropriate graft materials
 - d. timing of intervention
10. Manage complications of common major vascular procedures such as:

- a. carotid endarterectomy
- b. aortic reconstruction
- c. lower extremity vascular reconstruction

Medical Knowledge

PGY 1

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:
 - d. solitary neck mass
 - e. soft tissue mass
 - f. hyperparathyroidism
 - g. lesions of the breast
 - h. hernias
 - i. acute appendicitis
 - j. inflammatory bowel disease
 - k. biliary colic
 - l. acute cholecystitis
 - m. cholangitis
 - n. diverticulitis
 - o. UGI bleeding
 - p. LGI bleeding
 - q. gastric lesions
 - r. colorectal lesions
 - s. anorectal disorders (hemorrhoids, fistula, fissure, pilonidal cyst)
 - t. 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:
 - e. angiography
 - f. computed axial tomographic scanning
 - g. ultrasound
 - h. magnetic resonance imaging
12. Summarize the pathophysiology, clinical manifestations, and therapeutic options of specific categories of vascular disease:
 - c. venous disease
 - i. thromboembolic disease
 - ii. pulmonary embolism
 - d. arterial disease
 - i. atherosclerosis and its related disorders
 - iv. 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

PGY 3

All of the above, plus:

9. 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
10. As general surgery is a vast discipline by nature, this list is by no means all-inclusive.
11. 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
12. 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
13. Summarize the etiology, pathophysiology, and therapeutic options of specific categories of vascular disease:
 - d. venous disease
 - i. varicose vein disease
 - ii. post-phlebitic syndrome
 - v. portal hypertension
 - e. 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
 - f. 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
14. 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
15. Describe the surgically correctable causes of hypertension and their diagnostic modalities.
16. Discuss the mechanics of action and the therapeutic role of the following pharmacologic types of agents:
- a. vasopressors
 - b. vasodilators
 - c. adrenergic blocking agents
 - d. anticoagulants
 - e. antiplatelet agents
 - f. thrombolytics
17. 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
14. Have a basic understanding of the different treatment options for a patient with end stage renal disease.
15. Indications for vascular access procedures.
16. Indications for peritoneal dialysis.

PGY 5

All of the above, plus

- 1. Describe the basic clinical manifestations of congenital vascular disease.
- 2. Summarize the etiology, diagnosis, and therapeutic options of specific categories of vascular disease:
 - a. arterial disease
 - i. inflammatory vascular disease and vasculitis
 - ii. arteriovenous fistulas or malformations
 - iii. neurovascular compression syndromes (thoracic outlet)
 - b. miscellaneous
 - i. tumors

- ii. sympathetic nervous system (causalgia, reflex sympathetic dystrophy)
- 3. Describe the indications for balloon angioplasty and vascular stent placement with risks and complications.
- 4. Summarize the etiology, microbiology, and treatment of diabetic foot infection.
- 5. Categorize the prevention and management of operative and postoperative complications, including graft infections, ischemic bowel, graft thrombosis, and extremity ischemia.
- 6. Outline the manifestation of failing peripheral vascular grafts.
- 7. Discuss the principles of reoperative vascular surgery.
- 8. Outline procedure for managing vascular surgical emergencies such as acute tissue ischemia or major hemorrhage (traumatic or ruptured aneurysm).
- 9. Discuss alternative operative procedures for the management of portal hypertension.
- 10. Analyze the management of complex vascular problems considering the following factors:
 - a. morbidity and mortality
 - b. advanced surgical techniques
 - i. endoscopy
 - ii. microvascular techniques
 - iii. endoluminal grafting
- 11. Outline the management of prosthetic graft infections, including:
 - a. diagnosis
 - b. use of alternate routes for revascularization
 - c. use of alternative graft materials
- 12. Summarize complications of common major vascular procedures such as:
 - a. carotid endarterectomy
 - b. aortic reconstruction
 - c. lower extremity vascular reconstruction

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 than 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.
6. Maintain confidentiality of patient information.
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-effect health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing.
3. Practice cost-effect 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-extendors in the surgical management of patients.
7. Advocate for quality patient surgical care.
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

ALL

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. Learn how to use the computerized patient record system (CPRS) which includes electronic H&Ps, electronic orders, and progress notes.
6. Attend the following conferences:
 - a. Grand Rounds, Tuesday 7 am

- b. Surgical M and M Conference, Tuesday 4 pm
- c. Basic Science Lecture, Tuesday 5 pm
- d. VA Surgical Conference, Wednesday 7:30 am
- e. VA Vascular Conference, Friday 7 am
- f. Journal Club, as announced

PGY 1

All of the above, plus:

1. Attend work rounds twice daily.
2. Write orders and complete all assigned tasks.
3. Co-sign or write progress notes daily.
4. Complete the work-up of patients for ambulatory surgery.
5. Work-up all admission to the inpatient ward.
6. Notify the senior resident or attending staff of any problems.

PGY 3

All of the above, plus:

1. Lead morning and afternoon rounds with surgical team.
2. Supervise junior residents during the performance of invasive procedures:
 - a. central lines
 - b. chest tubes
 - c. thoracentesis
 - d. paracentesis
 - e. drainage of abscess
3. Closely supervise the management of all surgical ICU patients.
4. Review radiologic exams.
5. Evaluate all consults and admission and discuss with chief resident.
6. Document the assessment of the patient with appropriate plans in the chart.
7. Schedule all cases.
8. Participate in Mock Oral Boards twice per year.
9. Be prepared to present complications at VA Surgical Service Conference.
10. Attend VA Tumor Board every 2nd and 4th Tuesday at 3pm.
11. Oversee appropriate completion of the medical records by PGY 1s.

PGY 5

All of the above, plus:

1. The PGY 5 is expected to be directly involved in all clinical decision-making. All questions should first be referred to the PGY 5.
2. Discuss consults, admissions, and complications with the appropriate staff.
3. Participate in major general and vascular surgical cases as primary surgeon or assistant. If PGY 5 is not available, the attending staff should be informed preoperatively.
4. Evaluate all new consults in the clinic and the hospital with the PGY 3.
5. Supervise junior residents in minor operating room and main operating room.
6. Attend rounds on inpatients.
7. Attend Tumor Board if the PGY 3 is unable.
8. Maintain a primary responsibility and availability to the VA Surgical Service. Participation in clinical care elsewhere is only permissible with the advanced knowledge and permission of the Chief of Surgery or designee.

9.