

**SURGERY CORE CLERKSHIP
GOALS & OBJECTIVES
From the Student Handbook**

ROTATION GOALS

The overarching objective of the surgical clerkship is to familiarize the student with the entire surgical experience. At a minimum, you should come away from the clerkship as an educated consumer of surgical resources. This includes membership on the "surgical team" with full participation in all activities of the team. These activities will include inpatient and outpatient evaluation, treatment planning, discussions concerning decision-making, preoperative evaluation, operative experience, post-operative care, surgical rounds and surgical conferences. Students will take overnight call responsibilities on a schedule determined by the onsite Associate Clerkship Director.

While you will have a plethora of diverse surgical experiences while on the clerkship, it is impossible to cover the entire discipline of surgery in a ten week period. Thus, it is critically important that you read the issued textbooks to ensure you are exposed to the full breadth of surgery. It is easy to focus only on those surgical problems that you are seeing in the clinical environment, but students who fail to read typically struggle with the NBME Surgery subject examination at the end of the clerkship.

CLERKSHIP OBJECTIVES

Knowledge

Specific written learning objectives are available for your review at the USU Department of surgery website, <http://www.usuhs.edu/surgery/student.html>. Click on Student Information. These published objectives pertain primarily to the daily lecture series you will have at each clinical site, and a perusal of them will give you an idea of the breadth of information you will be responsible for on the NBME shelf exam.

Communication

One of the key elements of becoming a successful physician (in any specialty) is communication, both with patients and their families as well as with other health care professionals. As a student you are expected to demonstrate empathy, compassion, sensitivity, and respect for patients at all times. Additionally, you are expected to function as an integral and cooperative member of the health care team, working collaboratively and contributing to the team effort.

Professionalism

In addition to interpersonal skills, professionalism is a core competency to being a qualified military medical officer. Specifically, as a student you are expected to demonstrate reliability, commitment, and integrity; to seek, receive and apply feedback in a constructive manner; and to take ownership of your own education.

General Surgery (5 weeks - 21 Topic Areas to address)

Introduction/ Orientation	Pre-Op Evaluation	Fluids/Lytes/ Acid-Base	Surgical Nutrition	Shock
Intro to Critical Care	Surgical Infections	Intro to Trauma	Burns	
Acute Abdomen	Pancreas	Small Bowel & Appendix	Hepatobiliary	GI Bleeding
Breast Disease	Anorectal Disease	Colon Benign & Malignant	Surgical Endocrinology	
<i>Translational Small Group Discussion - Surgical Bleeding</i>	Esophagus	Stomach / Bariatric	Hernia	

Formalized teaching session objectives with reading referenced in parentheses GS= Essentials of General Surgery 4th Edition, SS= Essentials of Surgical Specialties 3rd Edition, MR= Mont Reid Surgical Handbook 6th Edition

Peri-Operative Evaluation and Management of Surgical Patients (GS; Chapter 2 Perioperative Management of Surgical Patients)

1. Describe the value of the history and physical exam in the evaluation of a patient with a surgical condition.
2. Name the appropriate preoperative screening tests for patients based upon their age, comorbidities, and planned operation.
3. Discuss the preoperative assessment of cardiac and pulmonary risk, and describe the role of outside consultation in the medical evaluation of a patient undergoing an elective surgical procedure.
4. Discuss common postoperative complications and their management.

Fluids, Electrolytes and Acid-Base Balance (GS; Chapter 3 Fluids, Electrolytes and Acid Base)

1. Describe the fluid compartments in the body.
2. Describe the three main purposes of intravenous fluid administration, and select the fluid appropriate to each situation.
3. Discuss disorders of volume in the surgical patient, and how they are recognized and managed.
4. Describe the etiology, presentation, and management of common electrolyte abnormalities in the surgical patient.
5. Describe the etiology, presentation and management of disorders of acid-base status in the surgical patient.

Surgical Nutrition (GS; Chapter 4 Nutrition)

1. Describe how a patient's calorie and protein requirements can be estimated.
2. Describe methods to assess nutritional status in a surgical patient, including history, physical exam, and objective data.
3. Describe options for nutritional therapy, and list the risks and benefits of each method.

Shock (GS; Chapter 6 Shock)

1. Define shock.
2. Describe the physiology of shock, and the compensatory responses to the shock state.
3. List the etiologies of shock.
4. Describe how to recognize the shock state in a given patient.
5. Describe the general principles of management of shock.

Surgical Critical Care (GS; Chapter 7 Surgical Critical Care)

1. List indications for a patient to be in an ICU.
2. Describe the initial management of a patient with acute respiratory failure, including discussing the use of ventilatory support.
3. Discuss techniques of hemodynamic monitoring, and describe the hemodynamic effects of common vasoactive agents, including inotropes and vasopressors.
4. List the clinical findings found in the systemic inflammatory response syndrome (SIRS).

Surgical Infections (GS; Chapter 9 Surgical Infections)

1. Define surgical site infection.
2. List factors that increase the risk of surgical infection.
3. List the four classifications of surgical wounds, give an example of each, and state the frequency of infection associated with each.
4. Discuss the principles involved in selection and administration of prophylactic antibiotics.
5. List the common causes of and work-up for post-operative fever.
6. Describe the clinical presentation, microbiology, and management of a surgical site infection.
7. Discuss the clinical presentation, microbiology, and management of necrotizing soft tissue infection.

Trauma (GS; Chapter 10 Trauma)

1. Describe the conduct of the initial assessment (primary survey) on an acutely injured patient.
2. Discuss how to identify and treat life-threatening injuries identified in the primary survey.

Burns (GS; Chapter 11 Burns)

1. List the initial steps in the management of an acutely burn-injured patient.
2. List the classifications of burns by depth, and describe the clinical presentation of each.
3. Define inhalation injury, and discuss how to clinically identify and acutely manage inhalation injury.
4. Discuss the Rule of Nines for determining burn size.

5. Define burn shock, and state the formula(s) that govern fluid resuscitation in the burn-injured patient.
6. List the general indications for referral of a patient to a regional burn center.
7. Discuss the principles of management of minor burns such as may be seen in a primary care physician's office.
8. Discuss the pathophysiology and management of chemical and electrical burns.

Acute Abdomen (MR; Chapter 18 Acute Abdomen)

1. Define "acute abdomen".
2. Discuss the physiology of abdominal pain, and compare and contrast visceral pain, parietal pain, and referred pain as they pertain to the acute abdomen.
3. Discuss the importance of the history in evaluating a patient with an acute abdomen, particularly characteristics of the pain, associated alterations in bowel function, and pertinent aspects of the medical history and review of symptoms.
4. Outline the important elements of the physical exam in a patient with an acute abdomen, including the proper approach to exam of the abdomen.
5. Define "peritoneal sign". Describe the proper technique to elicit each of the following, and discuss the significance of a positive finding: involuntary guarding, rebound tenderness, psoas sign, obturator sign, Rovsing's sign, Murphy's sign.
6. Discuss the role of laboratory tests in the evaluation of a patient with an acute abdomen.
7. Discuss the role of imaging in the evaluation of a patient with an acute abdomen, including plain radiographs, ultrasound, and CT scan.
8. List a differential diagnosis for the acute abdomen (including "medical" causes), and identify which ones require urgent surgical intervention.
9. Describe the initial treatment and preoperative preparation of a patient with an acute abdomen.

Pancreas (GS; Chapter 18 Pancreas)

1. Review the normal anatomy and physiology of the pancreas.
2. Define acute pancreatitis, and list the common etiologies.
3. Describe the clinical presentation, evaluation, prognostic indicators, and management of acute pancreatitis.
4. List indications for surgical intervention in acute pancreatitis and its complications.
5. Outline the epidemiology, clinical presentation, evaluation, prognosis and management of both pancreatic adenocarcinoma and pancreatic neuroendocrine tumors.

Small Intestine and Appendix (GS; Chapter 15 Small Intestine and Appendix)

1. Review the normal anatomy and physiology of the small intestine and vermiform appendix.
2. Describe the common etiologies and clinical manifestations of mechanical small bowel obstruction (SBO).
3. Discuss the initial workup and management of a patient with SBO, including laboratory tests and radiographs.
4. Outline a treatment plan for a patient with SBO; discuss the indications for operative therapy.
5. Describe the various clinical presentations of a patient with Crohn's disease.

6. Describe the medical treatment of Crohn's disease, and list the indications for surgical intervention.
7. Discuss the causes, clinical presentation, diagnostic evaluation, and management of acute mesenteric ischemia.
8. Discuss the role of surgery in the management of patients with small bowel tumors, including carcinoid.
9. Discuss the location, frequency, and various clinical presentations of a patient with a Meckel's diverticulum.
10. Discuss the pathophysiology, clinical presentation and differential diagnosis of acute appendicitis, and outline the diagnostic workup of a patient with suspected appendicitis.

Hepatobiliary (GS; Chapter 17 Biliary Tract, Chapter 19 Liver)

1. Review the normal anatomy and physiology of the liver and biliary tract.
2. Describe the pathophysiology and epidemiology of gallstone disease.
3. Outline the clinical presentation, evaluation (including laboratory tests and imaging), and management of the following disorders: biliary colic, acute cholecystitis, choledocholithiasis, acute cholangitis, gallstone pancreatitis, biliary stricture, and gallstone ileus.
4. Discuss the use of the following in the evaluation of biliary disease: ultrasound, HIDA scan, CT scan, intraoperative cholangiogram, MRCP, and ERCP.

GI Bleeding (MR; Chapter 22 Gastrointestinal Bleeding)

1. Describe the clinical presentation and initial management of a patient with an acute gastrointestinal (GI) bleed, including differentiation of an upper- vs a lower-GI source.
2. Provide a differential diagnosis for acute upper GI bleed, and discuss the role of non-operative and surgical management of each.
3. Discuss the appropriate use of imaging and other modalities to localize a GI bleed.
4. Provide a differential diagnosis for acute lower GI bleed, and discuss the role of non-operative and surgical management of each.

Breast Disease (GS; Chapter 20 Breast)

1. Review the normal anatomy and physiology of the breast.
2. List the risk factors for breast cancer.
3. Name the guidelines for screening mammography.
4. Provide a differential diagnosis for a solitary discrete breast mass, and discuss how this varies with the patient's age.
5. List diagnostic modalities and describe their sequence in the workup of a patient with: (1) a breast mass, and (2) an abnormal mammogram.
6. Discuss surgical treatment options for invasive mammary carcinoma and ductal carcinoma in situ.
7. Describe the appropriate use of and rationale for adjuvant chemotherapy, radiation therapy, and hormonal therapy in the treatment of breast cancer.
8. Describe the diagnostic workup and management of: breast pain, nipple discharge, mastitis, breast abscess, and gynecomastia.

Anorectal Disorders (GS; Chapter 16 Colon, Rectum and Anus)

1. Review the normal anatomy and functional physiology of the anus.
2. Describe the clinical manifestations and principles of management of patients with symptomatic hemorrhoids.
3. Describe the clinical manifestations and principles of management of patients with perianal infections, including fistula-in-ano.
4. Describe the clinical manifestations and principles of management of patients with anal fissure.
5. Describe the clinical manifestations and principles of management of patients with pilonidal disease.
5. Describe the common benign tumors of the liver, their epidemiology and management.
6. Discuss the epidemiology, clinical presentation, evaluation, and management of primary malignant tumors of the liver (hepatocellular carcinoma and cholangiocarcinoma).
7. Discuss the management of metastatic cancer to the liver.
8. Discuss the pathophysiology, evaluation, and management of portal hypertension and its complications.

Colon (GS; Chapter 16 Colon, Rectum, and Anus)

1. Review the normal anatomy and physiology of the colon.
2. Discuss the pathophysiology, clinical presentation, differential diagnosis and management of a patient with diverticular disease.
3. List indications for surgical intervention in complicated diverticular disease.
4. Compare and contrast ulcerative colitis and Crohn's disease in terms of clinical presentation, pathology, natural history, and treatment.
5. Describe the common etiologies and clinical manifestations of mechanical obstruction of the large bowel, and discuss the initial workup and management of a patient with large bowel obstruction.
6. Discuss the epidemiology, clinical presentation, staging, and treatment of carcinoma of the colon and rectum.

Surgical Endocrinology (GS; Chapter 21 Surgical Endocrinology)

1. Review the normal anatomy and physiology of the thyroid gland, parathyroid glands, and adrenal glands.
2. Discuss the differential diagnosis and evaluation of a patient with a thyroid nodule, and the therapeutic approach to each type of thyroid carcinoma.
3. Compare the pathophysiology of primary, secondary, and tertiary hyperparathyroidism.
4. List the indications for surgery for hyperparathyroidism.
5. Describe the common complications of thyroid and parathyroid surgery, and their management.
6. Describe the clinical features, laboratory findings, workup and management of a patient with each of the following: adrenal incidentaloma, Cushing's syndrome, aldosteronoma, and pheochromocytoma.
7. Outline the MEN syndromes and list the component lesions for each.

Surgical Bleeding – covered in the Translational Small Group Discussion

Esophagus (GS; Chapter 13 Esophagus)

1. Review the normal anatomy and physiology of the esophagus.
2. Discuss the role of each of the following in the workup of esophageal disease: barium swallow, esophageal manometry, pH monitoring, endoscopic examination, EUS, and CT scan.
3. Describe the symptoms of gastroesophageal reflux, and discuss the diagnostic procedures indicated to confirm the diagnosis.
4. List the indications for operative management of GERD, and discuss the physiologic basis for the antireflux procedure used.
5. List the symptoms that suggest esophageal cancer, and outline a plan for diagnosis and staging of a patient with esophageal cancer.
6. Describe the surgical procedures to resect esophageal cancer.
7. Describe the clinical presentation, workup, and management of esophageal perforation.
8. Describe the pathophysiology, workup, and management of achalasia.

Stomach and Duodenum / Bariatric Surgery (or as an optional separate topic) (GS; Chapter 14 Stomach and Duodenum. MR; Chapter 30 Bariatric Surgery)

1. Review the normal anatomy and physiology of the stomach and duodenum.
2. Compare and contrast the pathophysiology, evaluation, and treatment of gastric and duodenal ulcer disease.
3. List the indications for surgical intervention in peptic ulcer disease; describe the common operations performed and discuss their complications including postgastrectomy syndromes.
4. Discuss the epidemiology, clinical presentation, classification, and treatment of gastric adenocarcinoma.
5. Review the classification, pathophysiology, and therapy of obesity.
6. List the indications for bariatric surgery.
7. Describe the advantages and disadvantages of common procedures performed for the treatment of morbid obesity and list their complications.

Hernia (GS; Chapter 12 Abdominal Wall Including Hernia)

1. Discuss the layers of the abdominal wall and their pertinent anatomic relations and reflections in the groin.
2. Define indirect inguinal hernia, direct inguinal hernia, and femoral hernia, and describe their anatomic locations.
3. List factors that predispose to the development of inguinal hernias.
4. Define reducible hernia, incarcerated hernia, strangulated hernia, Richter's hernia, sliding inguinal hernia, and diastasis recti.
5. Outline the principles of management for patients with groin hernias, including discussing the surgical options.
6. List factors that predispose to the development of incisional hernias.
7. Discuss the appropriate use of prosthetic mesh in the surgical repair of hernias.
8. Outline the principles of management for patients with umbilical hernias, including children and adults.

Surgical Subspecialties (5 weeks - 20 Topic Areas to address)

CT Heart	CT Lung	Vascular occlusive disease	Vascular aneurismal disease	Vascular venous
Ortho Trauma	Ortho Tumors/Joints	Spine	NS Head injury	
Plastics Wounds / flaps	Hand	Face	Melanoma / skin cancers	
GU prostate	GU Trauma	GU Other	Pediatric Surgery	
Ophthalmology	Otolaryngology	Transplantation		

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CT Heart (SS; Chapter 4 Cardiothoracic Surgery)

1. Describe the fundamental vascular and valvular anatomy of the heart.
2. List the risk factors and common clinical symptoms of ischemic heart disease and discuss differential diagnosis
3. List treatment options for patients with ischemic heart disease
4. Describe the indications for surgical intervention in a patient with ischemic heart disease.
5. Compare and contrast at least two available techniques for revascularization
6. Describe appropriate management of acute cardiac tamponade
7. State the clinical indications for aortic, tricuspid, and mitral valve replacement.
8. Discuss the common congenital cardiac abnormalities, including PDA, tetralogy of Fallot, coarctation of the aorta, septal defects, and transposition of the great vessels and stratify according to cyanotic or acyanotic presentation.
9. Outline the evaluation and treatment of traumatic aortic rupture and list at least two potential complications.

CT Lung (SS; Chapter 4 Cardiothoracic Surgery)

1. Describe the basic anatomy of the bronchial tree and lung down to the segmental level
2. Discuss the evaluation and treatment of hemoptysis.
3. Create an algorithm to evaluate a solitary lung nodule
4. Discuss the etiology and management of lung abscess and empyema
5. Define and discuss the management of chest trauma, including open pneumothorax, simple pneumothorax, tension pneumothorax, hemothorax, and flail chest
6. Describe the common pathologic lesions of the anterior, posterior, and superior mediastinum.

7. List the risk factors and symptoms of lung cancer.
8. Outline the management for primary lung neoplasms and metastatic disease in the chest.
9. Describe the preoperative preparation and assessment of patients undergoing pulmonary assessment.

Vascular Occlusive disease (GS; Chapter 23 Diseases of the Vascular System)

1. List at least four risk factors for the development of atherosclerosis
2. List at least three anatomical sites that are predisposed to atherosclerotic plaque formation and explain why.
3. List at least 3 clinically important sequelae of atherosclerosis and discuss how to retard the atherosclerotic process
4. Describe the pathophysiology of intermittent claudication and differentiate this symptom from other causes of leg pain.
5. Describe the diagnostic approach and medical management of arterial occlusive disease of the upper and lower extremities
6. Describe the treatment options available for chronic occlusive disease of the distal aorta and iliac arteries as well as infrainguinal occlusive sites (femoral, popliteal, tibioperineal)
7. List 3 indications for amputation and discuss methods used to select amputation site.
8. Describe the natural history and causes of acute arterial occlusion and differentiate between embolic and thrombotic occlusion.
9. List 6 signs and symptoms of acute arterial occlusion and outline its management (medical vs. surgical)
10. Define and differentiate: Amaurosis fugax, TIA, CVA.
11. Outline the diagnostic methods and management of a patient with asymptomatic carotid artery disease.
12. List the differential diagnosis and outline the management plan for patients with AF, TIA, CVA.
13. Differentiate between hemispheric and vertebrobasilar symptoms.

Vascular Aneurismal disease (GS; Chapter 23 Diseases of the Vascular System)

1. List the anatomical layers of the arterial wall and describe the structure and function of each.
2. List the common sites and relative incidence of arterial aneurysms.
3. List the symptoms, signs, differential diagnosis, and diagnostic and management plans for a patient with a rupturing abdominal aortic aneurysm.
4. Discuss the risk factors, indications and contraindications for repair in patients with non-ruptured abdominal aortic aneurysm.
5. Compare the presentation, complications and treatment of thoracic, abdominal, femoral and popliteal aneurysms.
6. Define and discuss the prevention of the common complications of aneurysm surgery

Vascular Venous disease (GS; Chapter 23 Diseases of the Vascular System)

1. Identify the usual anatomic location of deep vein thrombosis and discuss the clinical factors that lead to an increased incidence of this problem.
2. List the noninvasive testing procedures used to diagnose DVT and venous valvular incompetence.

3. Outline the differential diagnosis of acute leg edema associated with pain.
4. List 5 modalities to prevent the development of DVT in surgical patients.
5. Describe the methods used to administer anticoagulants and thrombolytics and describe the contraindications to therapy.
6. Recognize the clinical presentation of pulmonary embolus and outline the diagnostic and treatment plan for a patient with a life threatening pulmonary embolus.
7. List the indications for surgical intervention in venous thrombosis and pulmonary embolus.
8. Outline the management of a patient with varicose veins and chronic venous insufficiency.
9. Outline the diagnosis and common management strategies for patients with venous ulcers.
10. List the criteria to help differentiate among venous, arterial, and infectious leg ulcers.

Orthopedics - Trauma (SS; Chapter 6 Orthopedic Surgery)

1. Define open and closed fractures, dislocations, and subluxations
2. Describe the clinical and radiologic features of common upper and lower extremity fractures
3. Outline the management priorities in treating fractures.
4. List complications of cast immobilization of acute extremity injuries.
5. List the vascular, neurologic and musculoskeletal complications associated with common fractures
6. Define and list the signs, symptoms, and diagnostic criteria for extremity compartment syndrome and outline its treatment.

Orthopedics - Tumors/Joints (SS; Chapter 6 Orthopedic Surgery)

1. Outline the laboratory and radiologic techniques used in diagnosing osteoarthritis and rheumatoid arthritis.
2. Describe the pathophysiology of osteonecrosis.
3. List and discuss the surgical and non-surgical treatment options of degenerative joint disease of the hip and knee.
4. List the common primary and secondary malignant neoplasms of bone.
5. Outline the diagnostic workup for a patients with a suspected primary or secondary malignant neoplasms of bone.
6. List, describe the pathophysiology of, and outline the common treatment options for sports injuries to the shoulder, knee, and ankle.
7. Describe the signs and symptoms of an infectious process of the bone and joints
8. List and describe the diagnostic workup used in making a definitive diagnosis of a bone or joint infection.

Spine (SS; Chapter 6 Orthopedic Surgery and Chapter 8 Neurosurgery)

1. Describe the anatomy of the spine as it relates to the three column theory of stability
2. List the characteristic findings of each of the spinal cord syndromes and compare and contrast cauda equine and conus medullaris syndrome.
3. List the most common causes of each of the spinal cord syndromes
4. List the important steps in the evaluation and management of acute spinal cord injury

5. Describe the diagnostic name, anatomy of the break, and findings on imaging of three stable C1-2 fractures
6. Describe the diagnosis and significance of Spinal Cord Injury Without Radiographic Abnormality (SCIWORA)
7. Describe the initial imaging findings, non-operative management and indications for surgery for subaxial C3-C7 fractures
8. Compare and contrast compression and burst fractures and list indications for surgical stabilization.
9. Define dermatome and myotome and list the classic symptoms, findings and common causes of radiculopathy.
10. List the signs and symptoms of neurogenic claudication and compare and contrast with vascular claudication.
11. Describe the clinical presentation and management of a patient with cervical and lumbar disc herniation
12. Describe the clinical presentation and management of a patient with cervical and lumbar stenosis.
13. List tumors that frequently metastasize to the spine and describe the indications for operative vs. nonoperative management of metastatic cord compression.

Head Injury (SS; Chapter 8 Neurosurgery)

1. Describe the basic anatomic organization of the CNS in terms of hierarchical control and functional segregation.
2. Describe the basic anatomical organization of the blood supply to the brain and the CSF circulation.
3. Apply the Glasgow Coma Scale to assessment of level of consciousness.
4. List the steps in the determination of brain death and explain their significance.
5. List and explain the indications and contraindications to lumbar puncture.
6. Discuss the treatment alternatives and sequential steps in medically stabilizing elevated intracranial pressure and the risks associated with hyperventilation.
7. List the indication for and different types of intracranial pressure monitors.
8. List the different types of intracranial lesions seen on early neuroimaging for closed head injury and discuss their significance for patient outcome and indications for surgical intervention.
9. Describe the management of scalp lacerations and penetrating head injuries.

Plastics / Wounds / Flaps (SS; Chapter 3 Plastic Surgery)

1. Define a wound and describe the sequence and approximate time frame of the phases of wound healing.
2. List and define the three types of wound healing.
3. List at least 6 key growth factors and cytokines involved in wound healing, their cells of origin, and their target cells.
4. Define clean, contaminate, infected, and chronic wounds.
5. List 5 different types of wounds (i.e. laceration, contusion etc) and discuss general management principles for each.

6. Define xenograft, allograft and autograft and give examples where each is used clinically to aid in wound management.
7. Compare and contrast full vs. split thickness skin grafts and give common indications for each.
8. Differentiate a flap from a graft and list at least 4 different types of flaps with common clinical applications.
9. Differentiate hypertrophic scar and keloid formation from normal wound healing.

Hand (SS; Chapter 3 Plastic Surgery)

1. Identify the surface anatomy, zones, and skeletal structure of the hand and be able to correctly describe an injury.
2. Correctly examine the hand for motor and sensory function of the radial, median, and ulnar nerve.
3. Describe the anatomical features and examination techniques for the flexors and extensors of the hand.
4. Define the blood supply to the hand and demonstrate an Allen's test.
5. List common soft tissue injuries and fracture to the hand and outline the management of each. List indications for referral to a specialist.
6. Outline the management of finger amputations and injury to the fingertip/nailbed.
7. Describe the clinical features and indications for treatment of paronychia, felon, tenosynovitis, and human bites to the hand.

Face (SS; Chapter 3 Plastic Surgery)

1. Outline the steps of the initial assessment of a patient with facial trauma
2. List the areas of facial soft tissue injury that typically require specialist input for optimal repair.
3. Identify risk factors for injury to the facial nerve and parotid duct and outline a plan of evaluation and management of these injuries.
4. Outline the steps of evaluation and management for fractures of the mandible including common complications.
5. Outline the steps of evaluation and management for fractures of the orbit and zygomatic maxillary complex including common complications.
6. Outline the steps of evaluation and management for nasal and nasoethmoidal fractures including common complications
7. Outline the steps of evaluation and management for fractures of the maxilla including common complications.
8. Correctly identify the LeFort classification scheme for maxillary fractures.
9. Correctly identify and describe the significance of CSF rhinorrhea associated with facial fractures. Outline a plan for management.

Melanoma / Skin Cancer / Sarcoma (GS; Chapter 25 Surgical Oncology)

1. Describe the etiologies and incidences of basal and squamous cell carcinoma.
2. Discuss the clinical characteristics, treatment methods, and prognoses for basal and squamous cell carcinomas.
3. List the predisposing factors for and the four categories of melanoma.
4. Outline the steps to confirm a diagnosis and determine the extent of malignant melanoma

5. Outline the local, regional, and systemic therapies for malignant melanoma.
6. List the clinical features of a sarcoma in the trunk, abdomen and extremities.
7. Describe the considerations in the evaluation of sarcoma, including the techniques of biopsy and studies to identify the extent of the disease.
8. Outline the treatment options for sarcomas, including surgery, radiation therapy, and chemotherapy.

Disorders of the Prostate (SS; Chapter 7 Urology)

1. Identify the clinically pertinent anatomy of the prostate gland and discuss its physiology.
2. Compare the clinical presentation, workup, and management of a patient with acute prostatitis, chronic prostatitis, and nonbacterial prostatitis.
3. Outline the clinical presentation, evaluation and management of a patient with BPH.
4. Describe how clinical evaluation and diagnostic studies can help a practitioner to distinguish between benign prostatic hypertrophy and prostate cancer.
5. Describe the use of PSA determinations in evaluating patients with prostate cancer and BPH
6. Outline the staging and management options of prostate cancer, both localized and advanced.

Urologic Trauma (SS; Chapter 7 Urology)

1. Differentiate minor renal trauma (Grade 1-3) from major renal trauma(Grade 4-5). Describe the mechanisms involved and outline appropriate management of each.
2. Outline the management of iatrogenic or traumatic ureteral injury.
3. Describe the evaluation and treatment of blunt and penetrating bladder injury. Compare and contrast intraperitoneal vs extraperitoneal bladder injury.
4. Describe the etiology, clinical presentation, evaluation, and management of penile trauma.
5. Describe the etiology, clinical presentation, evaluation, and management of urethral trauma.
6. Describe the etiology, clinical presentation, evaluation, and management of testicular trauma.

Diseases of the Genitourinary System (SS; Chapter 7 Urology)

1. Describe the workup of a renal mass lesion and describe the characteristic findings of benign and malignant renal masses.
2. Describe the workup and treatment options in the management of patients with calculous disease of the urinary system.
3. Describe the etiology, clinical presentation, sequelae and management of ureteral obstruction.
4. Discuss the physiology of normal bladder function and disorders of micturation. (i.e. incontinence, neurogenic bladder etc)
5. Discuss the etiology, presentation, and treatment of bladder cancer.
6. Describe the etiology, clinical presentation, evaluation, and treatment of penile cancer.
7. Describe the clinical presentation and management of four acquired penile disorders.
8. Discuss the indications for and complication of circumcision.
9. Discuss the etiology, presentation, evaluation and management of urethral stricture.
10. Describe the evaluation of a patient with a scrotal mass.
11. List the germ cell tumors of the testicle and outline their staging and treatment.
12. Outline a concise evaluation plan for the infertile male.

Pediatric Surgery (SS; Chapter 2 Pediatric Surgery)

1. Outline the appropriate steps in the preoperative preparation of children, list the important components of their operating room environment, and discuss the important components of their postoperative care, including pain management.
2. Explain the pathophysiology, clinical presentation, and appropriate management of congenital diaphragmatic hernia.
3. Describe the different anatomic configurations of esophageal atresia and tracheoesophageal fistula and explain how they are diagnosed and treated.
4. Describe the various types of anorectal malformations and related their anatomy to treatment and prognosis.
5. Discuss the pathophysiology, clinical presentation, and treatment of necrotizing enterocolitis.
6. Discuss the management of an infant with jaundice, particularly as it relates to biliary atresia.
7. Describe the anatomic differences between an inguinal hernia, communicating hydrocele, and a non-communicating hydrocele and discuss the rationale for the treatment of each.
8. Describe the typical patient with pyloric stenosis, the optimal techniques for diagnosis, and the proper management of this condition.
9. Describe the typical patient who has intussusception, the importance of early recognition, and the treatment.
10. Discuss the common complications of a Meckle's diverticulum.
11. List the characteristics of the common types of midline and later neck masses seen in children.
12. Discuss the clinical presentation, diagnostic workup, treatment and prognosis for the following tumors: neuroblastoma, Wilms tumor, and sacrococcygeal teratoma.

Ophthalmology (SS; Chapter 9 Ophthalmology)

1. Describe the management of penetrating eye injuries with or without retained intraocular foreign bodies.
2. Describe the evaluation and management of blunt injuries to the eye and orbit.
3. List the indications for removal of an eye.
4. Define glaucoma and its various categories.
5. Describe the pathophysiology of the different types of glaucoma and their presenting signs and symptoms.
6. Describe basic glaucoma treatment and the different therapies for the various kinds of glaucoma.
7. List the common causes and outline the evaluation of a patient with red eye with emphasis on those causes that threaten site.
8. Discuss the significance of visual field defects, papillary disorders, hypertensive retinopathy, retinal vein occlusion and emboli, third and sixth nerve palsies and diplopia.

Otolaryngology (SS; Chapter 5 Otolaryngology)

1. Differentiate between conductive and sensorineural hearing loss and identify treatable causes
2. Discuss the causes, diagnosis, treatment, and complications of acute and chronic otitis media with effusion.
3. List indications for tympanocentesis, myringotomy, and typanotomy tube placement.
4. Differentiate vestibular from nonvestibular causes of dizziness

5. Describe the common risk factors for and the appropriate workup and treatment of a patient with epistaxis.
6. Describe the more common congenital, inflammatory, and benign neoplastic disorders of the oral cavity and pharynx.
7. Identify malignant disorders of the oral cavity and pharynx and discuss their treatment modalities.
8. List the indications for cricothyroidotomy and tracheostomy.
9. List the risk factors, workup, and 3 major treatment modalities of laryngeal cancer.
10. Describe the differential diagnosis, evaluation, and management of congenital, inflammatory, and neoplastic neck masses.

Transplantation (GS; Chapter 24 Transplantation)

1. List at least 5 organs or tissues currently being transplanted, indications for each, and outline approximate rates of graft and patient survival at 1 year and 5 years.
2. List the criteria used to establish death for the purposes of organ and tissue donation.
3. List the acceptable and exclusionary criteria for the donation of each organ or tissue.
4. Describe the methods of organ preservation during the interval from recovery to transplantation for the kidney, liver, pancreas, heart, and lung and list approximate intervals for preservation.
5. Define autograft, isograft, allograft, xenograft, orthotopic graft, and heterotopic graft.
6. List 7 current drugs used for immunosuppression for transplantation and describe their method of action and common side effects.
7. Distinguish among hyperacute, accelerated acute, acute, and chronic rejection in terms of pathophysiology, interval from transplant, histology, and prognosis.