



## **University of Illinois, Metropolitan Group Hospitals Program in General Surgery**

**Rotation Title:** General Surgery Service B- Lutheran General Hospital

**Level of Training:** PGY V, PGY III

**Faculty:** Dr. Shah, Dr. Resnick, Dr. Weisman, Dr. Marinov, Dr. Stoehr, and Dr. Saletta.

### **Rotation Description:**

This service embodies the basic curriculum of general surgery. A mixture of “bread and butter” type cases with some advanced oncologic surgical cases. Dr. Weisman provides the colorectal experience including sigmoidoscopies and colonoscopies, while Dr. Shah, Dr. Resnick, Dr. Stoehr, Dr. Saletta and Dr. Marinov provide a complete broad band general surgical experience including endocrine and critical care experience. Office experience is available one day a week. Attached goals and objectives will be covered largely through patient exposure and through didactic interaction between you and the teaching faculty. You are expected to augment your education with self study and discussion covering all attached goals and objectives in the written curriculum for residents. It is encouraged to use all the attached references to further augment your education.

While on this service, the chief will function as the “administrative chief” of all of the surgical services. This role will demand the chief to coordinate morning conferences, including M& M, basic science lectures (to be prepared by junior residents), and surgical grand rounds. The main goal of

M& M conference is to provide the surgeon with feedback as well as provide the hospital and surgeons with a measure of quality control.

### **Assessment:**

Monitoring of the accomplishment of the stated objectives will be performed using the following methods:

1. 360 degree evaluation: End of rotation assessment of resident's performance with respect to the stated objectives by faculty, nurses, fellow residents and medical students
2. Case Logs: auditing of operative cases pertinent to the specialty in the Surgical Operative Log

### **Surgical Skills Advancement:**

The resident will exhibit surgical performance skills based on the following guidelines:

1. By the end of the rotation, have completed (per necessity) the OSAT/OSCA for the following procedures:
  - a. PGY 3: laparoscopic appendectomy, laparoscopic inguinal hernia repair, laparoscopic cholecystectomy
  - b. PGY 5: operative dictation, colonoscopy

## **COMPETENCY BASED LEARNING OBJECTIVES**

### **Patient Care**

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Residents:

1. Will demonstrate manual dexterity appropriate for their level;
2. Will develop and execute patient care plans appropriate for the resident's level, including management of pain;
3. Will participate in a program that must document a clinical curriculum that is sequential, comprehensive, and organized from basic to complex. The clinical assignments should be carefully structured to ensure that graded levels of responsibility, continuity in patient care, a balance between education and service, and progressive clinical experience are achieved for each resident

In addition residents will:

1. Perform a complete and thorough history and physical exam with adjunctive studies in the general surgical patient;
2. Initiate the laboratory evaluation and any other initial diagnostic studies with an understanding of the tests to be ordered;
3. Make informed decisions about diagnostic and therapeutic interventions for the general surgical patient;
4. Be proficient in the preoperative preparation for surgery and routine postoperative care;
5. Understand basic pathophysiology pertinent to the general surgical patient;
6. Understand the basic indications for common radiological and interventional studies used in the care of the general surgical patient such as plain X-rays, CT scans, MRIs, and ultrasound.

Junior Level:

1. Discuss frequency/death rates of the top five malignant neoplasms in men, women, and children in the United States.
2. Describe trends of increasing, decreasing, and high incidence for certain solid neoplasms.
3. Explain the implications of the heterogeneous cellular makeup of most solid neoplasms with reference to clinical behavior and response to adjuvant treatment.
4. Discuss the mechanisms of cellular apoptosis and the potential feasibility for therapeutic applications.
5. Identify genetic factors associated with neoplastic disease in regard to known proto-oncogenes.
6. Define current theories of carcinogenesis.
7. Summarize the tenets of tumor biology, including the biochemical events of invasion and metastasis; describe the natural history of these lesions.
8. Identify and differentiate between the diagnostic features of benign versus malignant neoplasms (gross and microscopic).
9. Predict patterns of presentation of malignant neoplasms.
10. Describe the characteristics of the various staging systems and explain their use in evaluating malignant neoplasms.
11. Outline the appropriate usage of tumor markers, tumor excretory metabolites, and diagnostic cytologic techniques.
12. Describe the principles of surgical technique for operative procedures designed for cure of malignant diseases and their application to endoscopic operative techniques.
13. Summarize the nutritional requirements for cancer patients, and describe how they differ from those recommended for a healthy patient.
14. Describe indications for curative versus palliative treatment, and formulate therapeutic plans for each approach.
15. Outline the status of the current predominant investigative work in cancer immunotherapy.
16. Explain the rationale for the use of heat shock proteins in conjunction with immunology.
17. Summarize current techniques of genetic screening for cancer.
18. Describe the biologic rationale, mechanisms, and current status of gene therapy for malignancy.
19. Describe the enzymatic determinants of prognosis for epithelial derived cancers and their biologic sources.
20. Discuss the economic and psychosocial issues associated with malignant disease, and analyze how they affect the management of patients with cancer, including:

- a. Ethics of cancer management
  - b. Rehabilitation
  - c. Home care resources
  - d. Patient support groups
  - e. Family support groups
  - f. Enterostomal therapy
  - g. Cost containment
  - h. Pre-admission procedures and authorization
  - i. Conservation of in-patient resources
  - j. Special problems of the elderly
  - k. Tumor registry data
- 21.** Identify available social service and community agency resources to address the issues listed in #20 above.

### Senior Level

- 1.** Apply clinical screening for common malignancies. Recognize typical presentations and clinical manifestations for different types of neoplasms.
- 2.** Describe the stimuli for and the biologic events in angiogenesis and the potential therapeutic implications thereof.
- 3.** Discuss the known facts relative to tumor suppressive genes and the implications of mutations.
- 4.** Stage specific neoplasms both clinically and pathologically, including the tumor, nodes, and metastasis system (TNM).
- 5.** Relate tumor staging to prognosis.
- 6.** Describe differences in presentation, treatment, and outcomes for malignancy in older patients.
- 7.** Compare each applicable treatment modality to the prognosis for tumors within the scope of general surgery.
- 8.** Apply post-treatment screening/surveillance for common malignancies.
- 9.** Discuss the known facts relative to tumor recurrence after local resection of a primary lesion of the breast and colon with regard to survival.
- 10.** Identify margins of resection and how this relates to local recurrence.
- 11.** Describe the indications for and actions of pharmacologic support in the postoperative state.
- 12.** Describe the indications and means for implementing nutritional support in the pre- and post- operative cancer patient.
- 13.** Explain the fundamental principles of radiation oncology and detail its application as a primary therapy for the treatment of selected benign and malignant lesions.

14. Summarize the indications and appropriate modalities for adjuvant therapy within the scope of general surgery, including chemotherapy, radiation therapy, immunotherapy, and gene therapy.
15. Describe radioimmunoguided surgery (RIGS) and its clinical applications.
16. Explain the rationale and methodology employed in lymphatic mapping and sentinel node biopsies along with the expected level of positive findings.
17. Understand the surgical options for venous access and oncologic care, and their risks/complications.
18. Describe the criteria and necessary procedures for intraoperative monitoring of cardiovascular and pulmonary functions of the cancer patient.
19. Analyze and explain a holistic approach to the treatment of patients with cancer.
20. Analyze the medical preparation of patients for cancer surgery to include the correction of metabolic and nutritional deficits.
21. Indicate the potential alterations in pulmonary function in the elderly patient which may affect preoperative preparation and postoperative management.
22. Identify the indications of anticipated need in elderly patients for:
  - a. Postoperative urinary tract decompression
  - b. Nutritional support
  - c. Thromboembolism prophylaxis
23. Define and apply the criteria for palliative versus curative treatment plans.
24. Analyze and explain the rationale for combined adjuvant modalities in the prevention and treatment of cancer recurrence.
25. Apply proper clinical and demographic data to the tumor registry.
26. Outline the indications for and initiate requests for appropriate consultation.
27. Demonstrate a working knowledge of prior research milestones, current research efforts, and cancer research methodology.

### **Medical knowledge**

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Residents:

1. Will critically evaluate and demonstrate knowledge of pertinent scientific information, and
2. Will participate in an educational program that should include the fundamentals of basic science as applied to clinical surgery, including applied surgical anatomy and surgical pathology; the elements of wound healing; homeostasis, shock and circulatory physiology; hematologic disorders; immunobiology and transplantation; oncology; surgical endocrinology; surgical nutrition, fluid and electrolyte balance; and the metabolic response to injury, including burns.

Junior Level (skills based):

1. Perform a complete history and physical examination on patients with cancer.
2. Formulate an appropriate differential cancer diagnosis, and record an independent, written diagnosis for each cancer patient assigned.
3. Excise benign lesions of skin, dermal appendages, and breast. Demonstrate proper wound care and follow-up management.
4. Excise skin cancers, demonstrating proper wound margins and appropriate wound closure and follow-up management.
5. Close wounds following major resections.
6. Manage colostomies and ileostomies.
7. Design an appropriate nutritional support program for a cancer patient both pre- and post- operatively.
8. Second assist on colostomies, ileostomies, and wedge resections of liver.
9. Perform lymph node biopsies, breast biopsies, and procedures of similar magnitude. Interpret frozen section slides with supervision.
10. Perform nutritional assessments and plan nutritional support programs.
11. Perform feeding gastrostomies and tube jejunostomies.

Senior Level (skills-based):

1. Demonstrate the capability for independent function in all aspects of cancer patient management, including palliative care planning.
2. Prepare and defend the preoperative assessment plan for the elderly patient in preparation for:
  - a. Gastric resection
  - b. Colon resection

- c. Pancreatic resection (Whipple Procedure)
  - d. Mastectomy
3. Stage specific neoplasms clinically and pathologically using the TNM system.
  4. Prepare patients medically for cancer surgery, including correction of nutritional and metabolic deficits.
  5. Specify and prepare management plans for nutritional support in the elderly patient. Indicate differences to be expected in requirements compared to patients less than 50 years of age.
  6. Assess the need and institute appropriate monitoring both pre- and post-operatively.
  7. Use appropriate support from pharmacologic agents.
  8. Prepare an operative plan for treatment of malignant disease.
  9. Perform colostomies, colostomy closures, and bowel anastomoses of all types.
  10. Demonstrate proficiency in the use and interpretation of operative and endoscopic ultrasonography.
  11. Demonstrate proficiency in fine-needle and core biopsies of the breast.
  12. Demonstrate proficiency in endoscopic ultrasonography for detection of hepatic metastases and depth of invasion of colorectal lesions.
  13. Demonstrate proficiency in gamma probe-directed or dye-directed sentinel lymph node biopsy for breast cancer and melanoma.
  14. Assume responsibility for managing the psychosocial aspects of neoplastic disease.
  15. Perform, with appropriate supervision, major resections in neck, chest, abdomen, breast, and extremity, including complex operative procedures (e.g., Whipple procedures, construction of ileal loop bladder, major neck dissections, segmental and lobar hepatic resections).
  16. Utilize appropriate social agencies and support groups in cancer patient management.
  17. Assume teaching responsibilities for junior residents as assigned.
  18. Participate in a multidisciplinary tumor board.

Junior Level (knowledge-based):

1. Describe the embryological development of the peritoneal cavity and the positioning of the abdominal viscera.
2. Diagram the anatomy of the abdomen including its viscera and anatomic spaces:
  - a. Musculoskeletal envelope
  - b. Lesser sac
  - c. Subphrenic spaces

- d. Morrison's pouch
  - e. Foramen of Winslow
  - f. Pouch of Douglas
  - g. True pelvis
  - h. Lateral gutters
  - i. Contents of the retroperitoneum
  - j. Major lymph node groups and their drainage
3. Explain absorption and secretory functions of the peritoneal surfaces and the diaphragm.
  4. Describe the anatomy of the omentum and its role in responding to inflammatory processes.
  5. Specify characteristics of the history, physical examination findings, and mechanism of visceral and somatic pain for the following processes:
    - a. Acute appendicitis
    - b. Ureteral colic
    - c. Bowel obstruction
    - d. Diffuse peritonitis
    - e. Perforated ulcer
    - f. Biliary colic
  6. List possible distinctions in the presentation and examination of the elderly patient with the following causes of acute abdomen:
    - a. Perforated viscus
    - b. Cholecystitis
  7. Discuss the differences in the physiologic response to stress in the geriatric patient.
  8. Explain the mechanism of referred pain in:
    - a. Ruptured spleen
    - b. Renal colic
    - c. Biliary colic
    - d. Pancreatitis
    - e. Basilar pneumonia
    - f. Inguinal hernia
  9. Illustrate use of the following diagnostic studies in the work-up of each process in the above:
    - a. Laboratory evaluation
    - b. Urinalysis
    - c. Plain x-rays
    - d. Contrast gastrointestinal (GI) studies
    - e. Ultrasound
    - f. Computed axial tomography (CAT)

- g. Biliary studies
  - h. Renal studies
- 10.** When considering the possibility of wound complications:
- a. What are the risk factors for abdominal wound infection?
  - b. What are the contributing factors for abdominal wound dehiscence and evisceration?
  - c. What are the usual clinical presentations and timing?
  - d. What is the incidence of wound infection in surgeries involving the biliary tree, upper GI tract, and colon?
- 11.** Differentiate between the following intestinal fistulas and the organs to which they most often communicate:
- a. Esophageal
  - b. Enteric (including duodenal)
  - c. Gastric
  - d. Colonic
- 12.** Explain the formation of fistulas in each of the following disease processes or factors:
- a. Operative complications (bowel injury with abscess formation)
  - b. Inflammatory bowel disease
  - c. Acute pancreatitis
  - d. Foreign body or prosthetic material
  - e. Malignancy
- 13.** Explain the role of a fistulogram in the diagnosis of intra-abdominal fistulas and abscesses.
- 14.** List the factors that prevent healing of a fistula.
- 15.** Describe the anatomy, clinical presentation, and complications of non-operative management for these hernias:
- a. Direct and indirect inguinal, femoral, and obturator
  - b. Sliding hiatal
  - c. Paraesophageal
  - d. Ventral
  - e. Umbilical
  - f. Spigelian
  - g. Paraduodenal
  - h. Richter's
  - i. Lumbar and Petit
  - j. Parastomal
  - k. Diaphragmatic
- (1). Posterolateral (Bochdalek)
  - (2). Anterior (Morgagni)

### (3). Traumatic

#### 1. Internal

16. Name the hernia types that are most common in elderly patients, and explain how they may become problematic.
17. Define a Richter's hernia and describe its clinical presentation.
18. Define a sliding hernia and describe its repair.
19. Differentiate between incarceration and strangulation.

#### Senior Level (knowledge-based):

1. Summarize the surgical procedures available for repair of the hernias listed in #21 above.
2. Outline the uses of prosthetic material and management of infection for incisional or recurrent hernias involving prosthetic material.
3. Explain the operative approaches for each of the following, including laparoscopic:
  - a. Abdominal cavity: liver/biliary tract, spleen, small bowel, large bowel, and pelvis
  - b. Retroperitoneal organs: kidneys, pancreas, adrenal glands, abdominal aorta
  - c. Thoracoabdominal aorta
  - d. Pericardial sac
4. Describe the use and method of placement of retention sutures.
5. Explain the rationale for and mechanics of techniques of peritoneal dialysis in:
  - a. Renal failure
  - b. Management of peritoneal infections or pancreatitis
6. Assess the treatment of secondary peritoneal infections due to peritoneal dialysis catheters.
7. Describe the pathophysiology and treatment of ascites in:
  - a. Malignancy
  - b. Hepatic disease: cirrhosis, Budd Chiari Syndrome
  - c. Chylous leak
  - d. Pancreatic leak
  - e. Cardiac disease
  - f. Renal disease

- g. Bile leak
8. Explain the indications for use and complications of peritoneo-venous shunts.
  9. Describe the etiology, manifestations, and treatment of:
    - a. Desmoid tumors
    - b. Rectus sheath hematoma
    - c. Retroperitoneal fibrosis
  10. Describe the more common retroperitoneal tumors, sarcomas, and liposarcomas. (What are their clinical presentations, treatments, and prognoses?)

### **Medical Knowledge: Topic Specific**

#### ALIMENTARY TRACT AND DIGESTIVE SYSTEM

##### Overall Objectives:

Demonstrate an understanding of the anatomy, physiology, and pathophysiology of the alimentary tract and digestive system.

Demonstrate the ability to manage problems of the alimentary tract and digestive system that are amenable to surgical intervention.

##### Junior Level:

1. Define the basic scientific principles of the alimentary tract and digestive system diseases to include:
  - a. Anatomy, embryology, and biochemistry of the gastrointestinal (GI) tract
    - (1). Embryologic development of primitive foregut and hindgut and its appendages, including normal rotation and fixation
    - (2). Histology of alimentary tract, including differentiation of cell types
    - (3). Anatomy of alimentary tract from esophagus to anus with emphasis on systemic blood supply, portal venous drainage, neural-endocrine axis, and lymphatic drainage
    - (4). Abdominal anatomy, explaining its relationship to lower thorax, retroperitoneum, and pelvic floor

- (5). Mucosal transport, including mechanism of absorption of nutrients and water
    - (6). Sites of electrolyte and acid-base regulation
  - b. Normal bacterial flora and their concentrations in the upper and lower GI tract
  - c. Immunologic properties of the GI tract and how this barrier is affected by: trauma, sepsis, burns, malnutrition, and chronic disease
  - d. Principles of intestinal healing
    - (1). Normal GI tissue integrity and strength and how this relates to healing of anastomoses
    - (2). Effects of suturing and stapling techniques of the gut
- 2. Explain and give examples for the following aspects of gastrointestinal diseases:
  - a. Infections inside and outside the GI tract from esophagus to anus, including the peritoneum
  - b. Embryologic abnormalities of the GI tract, including:
    - (1). Strictures
    - (2). Stenoses
    - (3). Webs
    - (4). Atresias
    - (5). Duplications
    - (6). Malrotations
  - c. Congenital and acquired abnormalities of gut motility
  - d. Neoplasia of the GI tract
  - e. Ulceration of the proximal and distal GI tract
  - f. Causes of GI obstruction
  - g. Causes of paralytic ileus
  - h. Causes of GI hemorrhage
  - i. Causes of GI perforation
  - j. Causes of abdominal abscess formation or secondary peritonitis
  - k. Short gut and malabsorptive conditions
  - l. Acute and chronic mesenteric ischemia
  - m. Portal hypertension and venous thrombosis
  - n. Inflammatory bowel diseases
  - o. Causes of an acute abdomen

- p. Management of intestinal ostomies
- q. Traumatic injury to abdominal viscera
  
- a. Peptic ulcer disease d. Gastroparesis
- b. Esophageal varices e. Inflammatory bowel disease
- c. Upper and lower GI bleeding f. Diverticulitis

Senior Level:

2. Specify the pathophysiology of multisystem problems of the alimentary tract and digestive system, including neurohumoral and hormonal interactions.
3. Explain the physiologic rationale for the following gastrointestinal operations:
  - a. Vagotomy
  - b. Pyloroplasty
  - c. Gastric resection for ulcer disease and reconstructive techniques
  - d. Small bowel resection with anastomosis
  - e. Ostomy formation
  - f. Resection of GI tract segments with nodes for tumors
  - g. Bypass of GI tract segments for resectable tumors
  - h. Drainage of pancreatic cysts (internal vs. external)
  - i. Drainage of abdominal and retroperitoneal abscesses (percutaneous vs. operative)
4. Detail the standard intraoperative techniques and alternatives associated with each of the above operations.
5. Explain the indications and contraindications for diagnostic and therapeutic endoscopy of the alimentary tract.
6. Assess alternatives to surgical intervention in the management of complex diseases of the alimentary tract and digestive system such as:
  - a. Short gut syndrome
  - b. Achalasia
  - c. Barrett's esophagus
  - d. Intestinal polyposis
7. Summarize the preoperative, intraoperative, and postoperative management of complex diseases of the alimentary tract and digestive system, including:

- a. Re-operative abdomen
- b. Failed peptic ulcer and reflux operation
- c. Management of post-gastrectomy syndromes
- d. High output GI fistulas
- e. Inflammatory bowel disease with strictures, pouches, ostomies, and perineal fistulas
- f. Recurrent colon malignancy and carcinomatosis

### Junior Level:

1. Evaluate emergency department or clinic patients who present with problems referable to the GI tract.
2. Serve as assistant to the primary surgeon during operations of the esophagus, stomach, small intestine, colon, and anorectum.
3. Perform less complicated surgical procedures such as:
  - a. Gastrostomy
  - b. Meckel's diverticulectomy
  - c. Appendectomy
  - d. Hemorrhoidectomy
  - e. Anal fissurectomy and fistulectomy
  - f. Incision and drainage of perirectal abscesses
4. Accept responsibility for (under the guidance of the chief resident and attending surgeon) the postoperative management of:
  - a. Nasogastric tubes
  - b. Intestinal tubes
  - c. Intra-abdominal drains
  - d. Intestinal fistulas
  - e. Abdominal incisions (simple and complicated)
5. Evaluate and manage nutritional needs (enteral and parenteral) of surgical patients until normal GI function returns.
6. Provide follow-up care to the surgical patient in the outpatient clinic or surgical office.

### Senior Level:

1. Perform initial consultation for inpatients with problems of the GI tract; develop differential diagnosis and initiate treatment plan.
2. Perform, under appropriate supervision, GI operations, including:
  - a. Vagotomy
  - b. Pyloroplasty
  - c. Gastric resection and reconstructive techniques
  - d. Small bowel resection with anastomosis
  - e. Drainage of pancreatic cysts
  - f. Drainage of abdominal and retroperitoneal abscesses
  - g. Lysis of adhesions
  - h. Repair of enterotomies
  - i. Colon resection
  - j. Creation of ostomies
3. Develop diagnostic and therapeutic endoscopy skills such as:
  - a. Endoscopic control of GI bleeding
  - b. Diagnostic colonoscopy
  - c. Polypectomy

## Liver and Biliary Tract

### Junior Level

1. Describe the anatomy of the liver and biliary system, including commonly found variations.
2. Describe the physiology and function of liver and biliary system to include:
  - a. Glucose metabolism
  - b. Protein synthesis
  - c. Coagulation
  - d. Drug metabolism
  - e. Reticuloendothelial system
  - f. Function of bile in fat metabolism
3. Explain the formation of bile, its composition, and its function in digestion. Describe the pathophysiology of gallstone formation.
4. Correlate bile formation and composition with disease states affecting the biliary system such as gallstone formation and biliary obstruction.
5. Discuss the enterohepatic circulation of bile.

6. Outline the work-up and differential diagnosis of the jaundiced patient.
7. Identify the most significant determinants of mortality in elderly patients following cholecystectomy.
8. Discuss various types of liver cysts (echinococcal or hydatid, nonparasitic) and the appropriate management of each.
9. Discuss the principal characteristics of and the treatment for the following:
  - a. Metastatic lesions to the liver
  - b. Primary malignancies of liver and biliary tree
  - c. Benign tumors of the liver
10. Summarize the etiologies and management of pyogenic and amebic hepatic abscesses.
11. Explain types of infectious hepatitis (A, B, C) with:
  - a. Modes of transmission
  - b. Diagnosis
  - c. Time course for serologic conversion
  - d. Natural course
12. Outline the pathophysiology, evaluation, and management of the following:
  - a. Choledochal cysts h. Gallstone pancreatitis
  - b. Caroli's disease i. Benign biliary strictures
  - c. Sclerosing cholangitis j. Acute cholecystitis
  - d. Primary biliary cirrhosis k. Symptomatic gallstones
  - e. Secondary biliary cirrhosis l. Acalculous cholecystitis
  - f. Cholangitis m. Biliary dyskinesia
  - g. Gallstone ileus n. Congenital biliary atresia

### Pancreas

1. Describe the anatomy of the pancreas, including regional vascular anatomy.
2. Summarize changes that occur in the anatomy of the pancreas with aging by considering:
  - a. Duodenal C loop
  - b. Atrophy of pancreas
  - c. Head of the pancreas

- d. Pancreatic ductal anatomy
3. Discuss the physiology of the pancreas, including endocrine and exocrine function and hormonal regulation.
- a. Endocrine--islet cells
    - (1). Alpha (Glucagon)
    - (2). Beta (Insulin)
    - (3). Delta (Somatostatin)
    - (4). Non-Beta (pancreatic polypeptide)
  - a. Exocrine--acinar cells
    - (1). Lipase
    - (2). Amylase
  - b. Hormonal regulation
    - (1). Secretin--bicarbonate secretion
    - (2). Cholecystokinin--enzyme secretion
4. Explain the pathophysiology of pancreatitis to include:
- a. Common etiologies such as:
    - (1). Gallstones
    - (2). Alcohol related
    - (3). Trauma
    - (4). Medications
    - (5). Postoperative
    - (6). Post endoscopic retrograde cholangiopancreatography (ERCP)
    - (7). Idiopathic
  - b. Diagnosis, evaluation, and medical management
  - c. Role of peritoneal lavage
  - d. Complications of pancreatitis, such as:
    - (1). Adult respiratory distress syndrome (ARDS; Acute lung injury-ALI also used)
    - (2). Hypovolemia
    - (3). Pseudocyst

- (4). Abscess
    - (5). Sterile pancreatic necrosis
    - (6). Infected pancreatic necrosis
  - e. Indications for operative management of pancreatitis
  - f. Management of gallstone pancreatitis with timing of surgery
  - g. Methods of prognostic assessment
5. Describe the incidence of these diseases in the elderly patient:
- a. Cholelithiasis
  - b. Acute gallstone pancreatitis
  - c. Pancreatic carcinoma
6. Explain the pathophysiology of carcinoma of the pancreas to include:
- a. Typical history and presentation
  - b. Diagnostic evaluation using:
    - (1). Computed axial tomography
    - (2). Ultrasound
    - (3). ERCP
    - (4). Percutaneous transhepatic cholangiography (PTC)
    - (5). Arteriography
    - (6). Laparoscopy/laparotomy
  - c. Indications for:
    - (1). Operative versus nonoperative biliary drainage
    - (2). Percutaneous versus endoscopic stenting
    - (3). Resection
    - (4). Concomitant gastrojejunostomy with operative biliary bypass
7. Discuss presentation, evaluation, and management of pancreatic pseudocysts with attention to:
- a. Complications of pseudocysts (hemorrhage, infection, rupture)
  - b. Timing of drainage
  - c. Percutaneous versus surgical drainage
  - d. Indications for external versus internal drainage
  - e. Choice of internal drainage procedure

**8.** Explain the diagnosis and management of pancreatic ascites.

Senior Level:

Liver and Biliary Tract

- 1.** Analyze alternatives to surgery in the management of gallstones, such as:
  - a. Oral dissolution with ursodeoxycholic acid
  - b. Extracorporeal shock wave lithotripsy
  - c. Endoscopic sphincterotomy
- 2.** Compare laparoscopic versus open cholecystectomy.
- 3.** Analyze the potential significance of finding a filling defect on ultrasonography or liver scan in an elderly patient. Discuss:
  - a. Frequency of metastatic cancer vs. primary tumors in liver
  - b. Correlation between incidence of gastrointestinal malignancy and increasing age
- 4.** Assess management alternatives for common bile duct stones:
  - a. Open versus laparoscopic common bile duct exploration
  - b. ERCP
- 5.** Since acute cholecystitis is becoming one of the more common indications for emergency admissions of elderly patients to a surgical service, specify factors contributing to its being a more complex disease in elderly vs. young patients by considering:
  - a. Incidence of comorbid disease such as diabetes
  - b. Atypical clinical presentation (right upper quadrant pain, fever, leukocytosis)
  - c. Signs of sepsis or septic shock
  - d. Jaundice
  - e. Altered mental status
- 6.** Discuss the pathophysiology of hepatic cirrhosis and portal hypertension to include:
  - a. Various etiologies of cirrhosis (alcohol and hepatitis)

- b. Differential diagnosis of portal hypertension (prehepatic, hepatic, posthepatic)
- c. Medical management of ascites, encephalopathy, and other complications of cirrhosis
- d. Child's classification of cirrhosis and its relationship to prognosis and surgical mortality
- e. Perioperative management of the cirrhotic patient
- f. Medical management of bleeding esophageal varices using Vasopressin, Sengstaken- Blakemore tube, sclerotherapy, and transjugular intrahepatic portosystemic shunts (TIPS)
- g. Surgical management of bleeding esophageal varices to include:
  - (1). Selection of operative candidates
  - (2). Appropriate selection of procedures such as:
    - a. Selective and nonselective shunts
    - b. Devascularization procedures
    - c. Esophageal transection

### Pancreas

1. Describe the etiology, pathophysiology, and management of chronic pancreatitis to include:
  - a. Indications for operative management
  - b. Selection of appropriate operative procedure such as:
    - (1) Longitudinal pancreaticojejunostomy (Puestow-Gillesby Procedure)
    - (2) Caudal pancreaticojejunostomy (Duval Procedure)
    - (3) Subtotal pancreatectomy
    - (4) Pancreatoduodenectomy
  - c. Role of celiac ganglion ablation (chemical splanchnicectomy) in pain control
2. Outline the appropriate surgical management of disorders of the pancreas to include:
  - a. Pancreatoduodenectomy (Whipple Procedure)
  - b. Distal pancreatectomy
  - c. Total pancreatectomy
  - d. Subtotal (distal 95%) pancreatectomy
  - e. Longitudinal pancreaticojejunostomy (Puestow Procedure)

- f. Internal drainage of pseudocysts (cystogastrostomy, cystoduodenostomy, Roux-en-Y cystojejunostomy)
- f. Explain the technical details of the above procedures, including the options available and the pros and cons of each.
- g. Describe the common complications associated with surgical management of diseases of the pancreas.
- h. Summarize the principles of perioperative management of diseases of the pancreas.

## **Practice-Based Learning and Improvement**

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

Residents are expected to develop skills and habits to be able to meet the following goals:

1. Identify strengths, deficiencies, and limits in one's knowledge and expertise;
2. Set learning and improvement goals;
3. Identify and perform appropriate learning activities;
4. Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;
5. Incorporate formative evaluation feedback into daily practice;
6. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems;
7. Use information technology to optimize learning;
8. Participate in the education of patients, families, students, residents and other health professions;
9. Participate in mortality and morbidity conferences that evaluate and analyze patient care outcomes; and

10. Utilize an evidence-based approach to patient care.

### **Interpersonal and Communication Skills**

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

Residents are expected to:

1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds;
2. Communicate effectively with physicians, other health professionals, and health related agencies;
3. Work effectively as a member or leader of a health care team or other professional group;
4. Act in a consultative role to other physicians and health professionals;
5. Maintain comprehensive, timely, and legible medical records, if applicable.
6. Counsel and educate patients and families; and
7. Effectively document practice activities.

### **Professionalism**

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Residents are expected to demonstrate:

1. Compassion, integrity, and respect for others;
2. Responsiveness to patient needs that supersedes self-interest;
3. Respect for patient privacy and autonomy;
4. Accountability to patients, society and the profession; and,
5. Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.
  1. High standard of ethical behavior; and
  2. A commitment to continuity of patient care.

### **Systems-based Practice**

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

Residents are expected to:

1. Work effectively in various health care delivery settings and systems relevant to their clinical specialty;
2. Coordinate patient care within the health care system relevant to their clinical specialty;
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;
  1. Advocate for quality patient care and optimal patient care systems;
  2. Work in inter-professional teams to enhance patient safety and improve patient care quality;

3. Participate in identifying system errors and implementing potential systems solutions;
4. Practice high quality, cost effective patient care;
5. Demonstrate knowledge of risk-benefit analysis; and
6. Demonstrate an understanding of the role of different specialists and other health care professionals in overall patient management.

### **READING MATERIALS:**

Educational materials which will function as guides for resident education during this course include but are not limited to:

1. The SCORE General Surgery Resident Curriculum Portal accessed at <https://portal.surgicalcore.org/home>
2. Schwartz's Principles of Surgery
3. Zollinger's Atlas of Surgical Operations
4. The Surgical Core Curriculum accessed via Access Surgery through the University of Illinois-Chicago website

### **OUTCOMES:**

Outcomes for the various goals and procedures in this curriculum will be assessed along the following standards:

1. Superior: the resident exhibits conceptual understanding beyond that which is described in this bulletin, and practice performance which is at a standard for a resident at a more advanced PGY year.
2. Above-Average: the resident has shown understanding and performance that is above what is expected for the rotation.
3. Competent: the resident exhibits conceptual understanding and practice based performance standards that are minimal, for the appropriate PGY year, for advancing towards general surgical practice.
4. In Need of Remediation: the resident has failed to grasp the basic concepts and practices necessary to advance past this rotation for the PGY year, and shows need of repeating or training augmentation.

