

**GENERAL SURGERY  
ROTATION GOALS AND OBJECTIVES  
2011-2012**

**SYNERGY MEDICAL EDUCATION ALLIANCE  
DEPARTMENT OF GENERAL SURGERY  
GENERAL SURGERY  
EDUCATIONAL OBJECTIVES  
PGY 1-5 LEVEL  
ACADEMIC YEAR 2011-2012**

**GENERAL SURGERY:**

**A: MEDICAL KNOWLEDGE: (ALL PG LEVELS)**

Resident will gain knowledge of the pathophysiology, diagnosis, management, treatment options (surgical/nonsurgical), post operative care, complications, long-term prognosis, patient risk and cost considerations of various conditions. Core basis of surgical knowledge reinforces relevant knowledge of normal and abnormal physiology, as well as relevant anatomy. It is acknowledged that the acquisition of knowledge is a continuing process throughout residency training, and that residents are expected to, at minimum, acquire the knowledge pertinent to their level of training expectations, while being encouraged to exceed these expectations.

**a. BODY AS A WHOLE (CORE BASIS OF SURGICAL KNOWLEDGE)**

- a. Hemostasis and bleeding diastasis
- b. Shock and hemodynamic alterations
- c. Surgical infections – pathophysiology, treatment, prevention
- d. Respiratory physiology-pulmonary function and assessment in the surgical patient, principles of ventilator management
- e. Anesthesiology and pharmacology, including pain management
- f. GI physiology
- g. Renal physiology
- h. Surgical endocrinology
- i. Nutrition and metabolic response to injury
- j. Burns physiology, resuscitation and management
- k. Wound healing
- l. Oncology and tumor biology
- m. Applied surgical anatomy-familiarity with regional anatomy including thoraco-abdominal, and neck, pelvis and extremities.
- n. Applied surgical pathology-gross and microscopic pathology and autopsy techniques.

**b. DISEASES OF THE ABDOMEN AND ALIMENTARY TRACT:**

**a. MEDICAL KNOWLEDGE:**

**PGY 1-2**

- i. Define the basic scientific principles of the alimentary tract and abdomen to include:
  1. Anatomy, embryology, and biochemistry of the alimentary tract
    - a. Embryologic development of primitive gut and its appendages, including normal rotation and fixation
    - b. Histology of alimentary tract, including differentiation of cell types
    - c. Anatomy of alimentary tract from esophagus to anus with emphasis on blood supply, venous drainage, and lymphatic drainage, and neural supply
    - d. Abdominal anatomy, muscular and neural elements, peritoneum and retroperitoneum, and relationship to the pelvis, diaphragm and lower thorax
  2. GI physiology
    - a. Physiology of deglutition and phases of digestion
    - b. Neuroendocrine control of GI secretion and motility
    - c. Regional controls and mucosal secretion and absorption (neural and hormonal)
    - d. Mucosal transport, mechanisms of absorption (nutrients and water), rates of mucosal turnover, and sites of electrolyte and acid-base regulation
    - e. Enterohepatic circulation
    - f. Digestion of sugars, fats, proteins, vitamins, and cofactors
    - g. Nutritional needs of surgical patient
    - h. Normal mechanisms of elimination
  3. Microbiology of the upper and lower GI tract
  4. Immunologic properties of the GI tract and how this barrier is affected by:
    - a. Trauma,
    - b. Sepsis
    - c. Malnutrition and chronic disease
  5. Principles of intestinal healing
    - a. Normal GI tissue integrity and strength
    - b. Normal healing of the GI tract, as it relates to surgery and surgical anastomoses
- ii. Understand the pathophysiology, diagnosis and treatment of the following gastrointestinal diseases:
  1. The "acute" abdomen
  2. Infections inside and outside the GI tract from esophagus to anus, including the peritoneum
  3. Embryologic abnormalities of the GI tract, including:
    - a. Strictures
    - b. Stenoses
    - c. Webs

- d. Atresias
  - e. Duplications
  - f. Malrotations
- 4. Congenital and acquired abnormalities of gut motility
- 5. Neoplasia of the GI tract (all parts)
- 6. Ulceration of the proximal GI tract (stomach, duodenum)
- 7. GI obstruction – mechanical, paralytic, and pseudo-obstruction
- 8. GI hemorrhage
- 9. GI perforation
- 10. Abdominal abscess formation or secondary peritonitis
- 11. Short gut and malabsorptive conditions
- 12. Acute and chronic mesenteric ischemia and ischemic bowel
- 13. Portal hypertension and venous thrombosis
- 14. Inflammatory bowel diseases
- 15. Management of intestinal ostomies
- 16. Traumatic injury to the abdomen – penetrating and blunt
- iii. Discuss some of the more common diseases of the esophagus in **elderly** patients, to include:
  - 1. Motility disorders
  - 2. Esophageal injuries
  - 3. Diverticular disease
  - 4. Inflammatory disease
  - 5. Gastroesophageal reflux (GERD)
  - 6. Tumors (benign and malignant)
- iv. describe the biological development of the peritoneal cavity and positioning of the abdominal viscera
- v. diagram the anatomy of the abdomen including its viscera and anatomic spaces:
  - 1. musculoskeletal envelope (focus on the anterior abdominal wall)
  - 2. lesser sac
  - 3. subphrenic spaces
  - 4. Morison's pouch
  - 5. foramen of Winslow
  - 6. pouch of Douglas
  - 7. true pelvis
  - 8. lateral gutters
  - 9. contents of the retroperitoneum
  - 10. major lymph node groups and their drainage
- vi. Explain the mechanism of referred pain in
  - 1. ruptured spleen
  - 2. biliary colic
  - 3. basilar pneumonia
  - 4. renal colic
  - 5. pancreatitis
  - 6. inguinal hernia
- vii. Discuss the following causes of paralytic ileus:
  - 1. post operative electrolyte imbalance
  - 2. retroperitoneal pathology
  - 3. trauma
  - 4. Extraperitoneal disease (central nervous system, lung)

- viii. Identify the common anatomic location of various intra-abdominal abscesses and disease processes associated with each.
  - 1. Evaluate a patient with an intra-abdominal abscess and determine the most appropriate treatment, including indications, contraindications
    - a. Percutaneous vs open drainage
- ix. Describe the anatomy, clinical presentation, and complications of non-operative management for these hernias:
  - 1. direct, indirect, inguinal, and femoral
  - 2. sliding hiatal
  - 3. paraesophageal
  - 4. ventral
  - 5. umbilical
  - 6. spigelian
  - 7. paraduodenal
  - 8. obturator
  - 9. lumbar
  - 10. parastomal
  - 11. diaphragmatic
    - a. (1) posterolateral (Bochdalek)
    - b. (2) anterior (Morgagni)
    - c. (3) Traumatic
  - 12. Internal (paraduodenal and others)
- x. Name the hernia types that are most common in the **elderly** and explain how they may become problematic
  - 1. Define a Richter's hernia and describe its clinical presentation.
  - 2. Define a sliding hernia and describe its repair.
- xi. Differentiate between *incarceration* and *strangulation*.
- xii. explain absorption and secretory functions of the peritoneal surfaces and diaphragm
- xiii. describe the anatomy of the omentum and its role in responding to inflammatory processes
- xiv. assess the following signs associated with the acute abdomen and describe their pathophysiology:
  - 1. referred pain
  - 2. rebound tenderness
  - 3. guarding
  - 4. rigidity
- xv. Describe the characteristics of the history, physical examination findings, and mechanism of visceral and somatic pain for the following processes:
  - 1. acute appendicitis
  - 2. bowel obstruction
  - 3. perforated ulcer
  - 4. ureteral colic
  - 5. diffuse peritonitis
  - 6. List possible differences in the presentation and examination of the elderly patient with the following causes of acute abdomen:
    - a. gastric/duodenal ulcer
    - b. cholecystitis
    - c. perforated viscus (ulcer, diverticulitis, appendicitis)

- xvi. Diagnosis and management of surgical wound complications:
  - 1. Risk factors and preventative measures
  - 2. Contributing factors for abdominal wound dehiscence and evisceration
  - 3. Clinical presentations
  - 4. Relative incidence of wound infection in surgeries involving biliary tree, upper GI tract, and colon

**PGY 3-4**

- xvii. Describe the pathophysiology of multisystem problems of the alimentary tract and digestive system, including neurohumoral and hormonal interactions.
- xviii. Describe the following operations, and the appropriate pathological or physiologic rationale for each:
  - 1. Vagotomy (highly-selective, selective and truncal) including drainage procedures (pyloroplasty) and their indications
  - 2. Gastric resection for ulcer disease and reconstructive techniques
  - 3. Small bowel resection with anastomoses
  - 4. Ostomy formation
    - a. Brooke ileostomy
    - b. Ileal anal pouch
    - c. Continent ileostomy
  - 5. Segmental resection of GI tract (small or large bowel) for neoplasm
    - a. Bypass of GI tract segments for unresectable tumors
  - 6. Drainage of pancreatic cyst (internal versus external)
  - 7. Drainage of abdominal and retroperitoneal abscesses (percutaneous versus open)
- xix. Detail the standard intraoperative techniques and alternatives associated with each of the above operations, the indications and potential complications
- xx. Explain the indications and contraindications for diagnostic and therapeutic endoscopy of the upper and lower alimentary tract
- xxi. Describe treatment alternatives in the management of complex diseases of the alimentary tract and digestive system such as:
  - 1. Short gut syndrome
  - 2. Achalasia
  - 3. Barrett's esophagus
  - 4. Gastroesophageal ulcers
  - 5. Intestinal polyposis
  - 6. Inflammatory bowel disease (IBS)
  - 7. Seropositive status for H. pylori
  - 8. Multifocal atrophic gastritis
  - 9. Re-operative abdomen
  - 10. Failed peptic ulcer and reflux operation
  - 11. Management of post-gastrectomy syndromes
  - 12. High output GI fistulas
  - 13. Inflammatory bowel disease
  - 14. Recurrent malignancy and carcinomatosis
- xxii. Describe the effect of co-existing disease in the following organ systems on surgical outcome:
  - 1. heart

2. lung
  3. kidney
  4. hemopoietic system
  5. Discuss the differences in a physiologic response to stress in the **geriatric patient**
- xxiii. Describe the diagnosis and management of gastrointestinal fistulas
1. Internal fistulas (entero-enteric, entero-colic, colo-vesical, colo-vaginal, other)
  2. External fistulas (enterocutaneous, colocutaneous, other)
- xxiv. Understand the role of each of the following factors in the formation of fistulas:
1. operative complications (bowel injury with abscess formation)
  2. inflammatory bowel disease
  3. foreign body or prosthetic material
  4. malignancy
- xxv. Explain the role of a fistulogram and diagnosis of intra-abdominal fistulas and abscesses
- xxvi. Discuss the conditions favoring operative versus non-operative treatment for fistulas
1. List of factors that prevent healing of a fistula

#### **PGY 5**

- xxvii. Be thoroughly familiar with the pathophysiology of multisystem problems of the alimentary tract and digestive system, including neurohumoral and hormonal interaction
- xxviii. Summarize the surgical procedures available for repair of hernias of all types.
- xxix. Outline uses of prosthetic material and management of infection for incisional or recurrent hernias involving prosthetic material.
- xxx. Explain operative approaches (incisions) for each of the following, including laparoscopic:
1. abdominal cavity: liver/biliary tract, spleen, small bowel, pelvis
  2. retroperitoneal organs: kidneys, adrenal glands, abdominal aorta
  3. thoraco abdominal aorta
  4. pericardial sac
- xxxi. Outline techniques for wound closure in various clinical situations
1. Clean versus clean-contaminated versus infected wounds
  2. Primary versus secondary closure
  3. The reoperative abdomen
  4. Wound dehiscence
  5. Use and indications for retention sutures
- xxxii. Assess the treatment of secondary peritoneal infections due to peritoneal dialysis catheters.
- xxxiii. Describe their pathophysiology and treatment of ascites in:
1. malignancy
  2. hepatic disease: cirrhosis, Budd-Chiari syndrome
  3. chylous leak
  4. pancreatic leak
  5. cardiac disease
  6. renal disease
  7. bile leak
- xxxiv. Describe the etiology, manifestations, and treatment of:

1. desmoid tumors
2. rectus sheath hematoma
3. retroperitoneal fibrosis
4. Describe the more common retroperitoneal tumors, sarcomas, and liposarcomas, their presentation, treatment and prognosis

**b. PATIENT CARE AND TECHNICAL SKILLS:**

**PGY 1-2**

- i. Perform, record, and report a complete patient evaluation and assessment of the patient presenting with acute or chronic gastrointestinal or abdominal disease of a possible surgical nature, in the emergency, inpatient, and ambulatory setting. Special emphasis at this level given to the diagnosis of acute abdominal pain
- ii. Demonstrate the essentials of patient evaluation and the indications and appropriate use of simple and specialized imaging techniques, in order to make a differential diagnosis, working diagnosis, and investigative and treatment plan including resuscitation where indicated:
  1. History/Symptoms
    - a. Abdominal pain
    - b. Nausea/emesis
    - c. Bowel function
    - d. Prior episodes
    - e. Past surgical history
  2. Physical examination:
    - a. Inspection
    - b. Auscultation
    - c. Percussion
    - d. Palpation
  3. Use of and interpretation of appropriate laboratory parameters (CBC, electrolytes, liver function tests, pancreatic enzymes, etc)
    - a. Use of labs as a diagnostic aid and as an indicator of the patient's overall condition
  4. Use of imaging examinations, including:
    - a. Plain abdominal films, upright chest X-ray
      - In the acute setting, identify free air, small and large bowel obstruction, ileus, pseudo-obstruction, volvulus on abdominal films
    - b. Ultrasound (basic)
    - c. CT scanning
    - d. Contrast studies - Barium swallow, Upper GI series small bowel series, enteroclysis, barium enema
      - i. Use of barium vs water-soluble contrast
    - e. MRI and PET scanning
    - f. Vascular imaging studies (mesenteric angiography)
    - g. Nuclear medicine modalities
      - i. Biliary (HIDA) or equivalent
      - ii. Bleeding scans

- h. Ultrasound (advanced) – transesophageal, transduodenal, endoscopic, anal
- 5. Fiber-optic endoscopy – upper and lower GI
- 6. Rigid anoscopy and sigmoidoscopy
- 7. Other tests of GI function including
  - a. Manometry
  - b. 24 hour pH measurement
  - c. Gastric analysis (basal and stimulated)
  - d. Radioisotope clearance studies
    - i. Technetium 99 m
    - ii. Technetium HIDA (hepatic 2, 6-dimethyl iminodiacetic acid) dynamic biliary imaging
    - iii. Hormonal determinations
    - iv. Absorption
- iii. Assist during operations of the esophagus, stomach, small intestine, colon, anorectum, and abdominal wall
  - 1. PGY – 1 level: Performance of simpler procedures under direct supervision of the surgeon (appendectomy, simple abscess drainage, simple perianal procedures, gastrostomy/PEG) at the discretion of the surgeon;
  - 2. PGY-2 level: Performance of part or all of more complicated procedures (cholecystectomy, inguinal hernia repair, open bowel resection)
- iv. Under the guidance of a higher level resident or attending surgeon, acquire skills in the postoperative management of:
  - 1. Nasogastric tubes
  - 2. Intestinal tubes
  - 3. Intra-abdominal drains
  - 4. Intestinal fistulas
  - 5. Abdominal incisions (simple and complicated)
- v. Evaluate and manage nutritional needs (enteral and parental) of surgical patients until normal GI function returns
- vi. Provide follow up care to the surgical patient in the outpatient clinic or surgical office

#### **PGY 3-4**

- vii. Perform initial consultation for problems of the GI tract; develop differential diagnoses and initiate treatment plans, and perform all patient care tasks as listed under PGY – 1 and 2
- viii. Assist the chief resident and attending staff with complex digestive system operative cases
- ix. Evaluate and initiate management of abdominal wound problems, including:
  - 1. infection
  - 2. evisceration
  - 3. fasciitis
  - 4. dehiscence
- x. Coordinate pre-and post-operative care of the patient with the acute abdomen

- xi. Assist in closure of abdominal incisions; exhibit competence in suture technique.
- xii. Develop diagnostic and therapeutic endoscopy skills such as:
  - 1. Diagnostic esophagogastroduodenoscopy
  - 2. Percutaneous endoscopic gastroscopy (PEG)
  - 3. Diagnostic colonoscopy
  - 4. Polypectomy
- xiii. Supervise and teach junior-level residents and assist them with the diagnoses, surgical management, and follow-up care of patients with diseases of the alimentary tract and digestive system

## **PGY 5**

- xiv. Perform operative surgery, under supervision but with minimal intervention, for a wide variety of simple and complex diseases, including but not limited to:
  - 1. Gastric surgery
    - a. For ulcer disease, acute or chronic, or complications of same (vagotomy with/or without drainage, resection, patching of perforated ulcer)
  - 2. Gastric resection
  - 3. Small bowel resection with anastomoses
  - 4. Nissen funduplications (open and laparoscopy)
  - 5. Common bariatric surgical procedures
  - 6. Small bowel resection with anastomoses
  - 7. Drainage of abdominal and retroperitoneal abscesses
  - 8. Lyses of adhesions
  - 9. Repair of enterotomies
  - 10. Colon resection
  - 11. Creation of ostomies
- xv. Open and close abdominal incisions of all varieties.
- xvi. Treat wound complications such as infections and evisceration
- xvii. Assist with thoracoabdominal and retroperitoneal exposures for access to kidneys, aorta, and iliac arteries.
- xviii. Perform laparotomy for acute abdomen, demonstrating a systematic approach for determination of the etiology of the process and appropriate measures for its management (a 5th year resident should be able to guide more junior residents through the case).
- xix. Perform more complex laparotomies involving diffuse peritonitis in the septic patient
- xx. Serve as effective surgical team leader.
- xxi. Serve as teaching assistant and mentor to more junior residents in the performance of simple and some complex procedures
- xxii. Coordinate intervention of multiple specialties that may be involved in management of GI problems
- xxiii. Supervise postoperative care of GI and digestive tract surgical patients.

**c. DISEASES OF THE BREAST**

As part of their general surgery rotation at all PGY levels, residents may be exposed to patients with breast disease, with competency - based objectives as described. In addition, a 2 month dedicated breast rotation takes place in the PGY-3 year (see separate goals and objectives for “Breast”)

**a. MEDICAL KNOWLEDGE**

**PGY 1-2**

- i. Describe the anatomy of the breast.
- ii. Explain the hormonal regulation of the breast.
- iii. Summarize the incidence, epidemiology, and risk factors associated with breast cancer.

- iv. Be familiar with the ANDI classification of benign breast disorders
- v. Be familiar with **Cancer Risk** associated with benign breast disorders and in situ carcinoma of the breast.
- vi. Familiar with classification of benign breast disorders:
  - 1. Nonproliferative disorders of the breast
  - 2. Proliferative breast disorders without atypia
  - 3. Atypical proliferative lesions.
- vii. Distinguish between these common entities in the differential diagnosis of breast masses:
  - 1. Fibroadenomas
  - 2. Cysts-gross and fibrocystic disease and risk factors.
  - 3. Abscesses
  - 4. fat necrosis
  - 5. cancer
  - 6. sclerosing adenosis
  - 7. Recurrent subareolar sepsis
    - a. Define those patients Suitable for fistulectomy
    - b. Define those patients Suitable for total duct excision
- viii. Be familiar with the relative risk estimates for the "**Gail Model**"
- ix. Explain the general indications, uses, and limitations of mammography. Defining important impact of screening mammography.
- x. Discuss the principles and historic context of the basic options available for the treatment of breast cancer such as:
  - 1. radical mastectomy
  - 2. modified mastectomy
  - 3. Patey mastectomy
  - 4. lumpectomy and axillary dissection
- xi. Outline the genetic and environmental factors associated with carcinoma of the breast.
- xii. Describe the following pathological types of breast cancer, including the biology, natural history, and prognosis of each:
  - 1. Infiltrating ductal carcinoma
  - 2. Ductal carcinoma in situ (DCIS)
  - 3. Infiltrating lobular carcinoma
  - 4. Lobular carcinoma in situ (LSIS)
  - 5. Other
- xiii. Be able to differentiate the salient characteristics of in situ (DCIS) lobular (LCIS) carcinoma of the breast.
- xiv. Be familiar with The Classification of Breast Ductal Carcinoma In Situ (DCIS)
- xv. Be familiar with the Foote and Stewart classification of breast cancer
- xvi. Define the TNM staging system for breast cancer.
- xvii. Define the staging of breast cancer and prognosis, survival results and treatment options including hormone manipulation and chemotherapeutic options and bone marrow transplantation.
- xviii. Describe the presentation, natural history, pathology, and treatment of the following benign breast diseases:
  - 1. Lactational Breast Abscess
  - 2. Chronic Recurring Subareolar Abscess
  - 3. Intraductal Papilloma
  - 4. Atypical Epithelial Hyperplasia
  - 5. Fibroadenoma

## 6. Sclerosing Adenosis

- xix. Explain the steps in the clinical decision tree that are involved in the work-up of a breast mass.
- xx. Discuss the role of mammography, needle aspiration, fine needle biopsy, open biopsy, and mammographic needle localization and biopsy. (Stereotaxic)
- xxi. Explain the mechanics and potential values of the stereotactic needle biopsy
- xxii. Outline the diagnostic work-up in the differential diagnoses of various forms of nipple discharge.
- xxiii. Explain use of tumor size, nodes, and metastases (TNM) staging and treatment of breast cancer with the additional sentinel lymph node staging system.
- xxiv. Summarize a rationale for using a team approach to facilitate the complex discussions and explanation of options for the newly diagnosed breast cancer patient prior to definitive treatment (e.g., oncologists, surgeon, plastic surgeon, and radiation therapist).
- xxv. Explain the role of reduction and augmentation mammoplasty.
- xxvi. Discuss several causes of gynecomastia and outline an appropriate workup.
- xxvii. Discuss indications for Mammo site insertion, technical aspects, complications and indications for.
  - 1. Discuss technique of Sentinel Lymph Node Biopsy (SLNB), complications, and indications.

## PGY 4-5:

- xxviii. Be familiar with percent incidence of sporadic, familial, and hereditary breast cancer
  - 1. Sporadic breast cancer
  - 2. Familial breast cancer
  - 3. Hereditary breast cancer
    - a. BRCA-1
    - b. BRCA-2
    - c. p 53 (Li-Fraumeni syndrome)
    - d. STK11/LKB1 (Peutz-Jaeger syndrome)
    - e. PTEN (Cowdens disease)
    - f. MSH2/MLH1 (Muir-Torre syndrome)
    - g. ATM (ataxia-telangiectasia)
    - h. Unknown
- xxix. Describe the characteristics, diagnoses, and therapy of less common lesions of the breast such as:
  - 1. inflammatory carcinoma
  - 2. Paget's disease
  - 3. Lactiferous duct fistula

4. Mondor's disease
  5. Cystosarcoma Phylloides
  6. bilateral breast carcinoma
  7. male breast carcinoma
- xxx. Understand the methodologies and results of landmark breast cancer trials: B-04, B-06, B-17, B-24 (NSABP)
  - xxxi. Be able to discuss the natural history of treated and untreated breast cancer and survival patterns both historically and modern day.
  - xxxii. Summarize the role of adjuvant chemotherapy and radiation therapy in the treatment of primary breast cancer.
  - xxxiii. Outline the importance of estrogen and progesterone receptors in the prognosis and treatment of breast cancer.
  - xxxiv. Describe the basic issues in the staging and treatment of metastatic breast cancer, including the role of :
    1. chemotherapy
    2. radiation therapy
    3. hormonal therapy
  - xxxv. Know treatment options of chemotherapeutic regimens for breast cancer in patients with:
    1. Node-negative women
    2. Node-positive women
  - xxxvi. Summarize the physiologic changes associated with pregnancy, including breast problems peculiar to pregnancy. Theorize appropriate management of breast cancer diagnosed during pregnancy.
  - xxxvii. Summarize the major considerations for post-mastectomy breast reconstruction.
  - xxxviii. Formulate plans for basic patient care, including pre-, intra-, and post-operative care.
  - xxxix. Identify and analyze data addressing controversial areas of breast disease, such as:
    1. current concepts in the management of cancer
    2. Cancer prevention techniques, such as tamoxifen and raloxifene.
    3. Role of various adjuvant therapy programs
    4. biological behavior of lesions such as lobular carcinoma in situ (LCIS)
    5. benefits and frequency of screening mammograms
    6. Relationship of mammographic parenchymal pattern to the risk of subsequent malignancy.
  - xl. Review and evaluate the following areas of research in breast disease:
    1. role of breast cancer susceptibility genes
    2. monoclonal antibodies
    3. Other breast markers, including Her-2/neu, Cathepsin D, and flow cytometry with chromosomal analysis.
  - xli. The role of sentinel lymph node biopsy for breast cancer
    1. sensitivity and specificity
    2. indication and contraindications
    3. technique
    4. treatment plan based on findings

**b. PATIENT CARE OBJECTIVES:**

**PGY 1-2**

- i. Take an appropriate history to evaluate breast patients to include:

1. pertinent risk factors
2. previous history of breast problems
3. current breast symptoms
- ii. Demonstrate an increasing level of skill in the physical examination of the breast, including recognition of the range of variation in the normal breast.
- iii. Be familiar with, and if possible, perform simple procedures under direct supervision, such as:
  1. diagnostic fine-needle aspiration of cysts
  2. drainage of simple breast abscesses
  3. core biopsy of breast masses
  4. open biopsy of superficial masses
- iv. Identify common lesions such as fibroadenomas, cysts, mastitis and cancer.
- v. Interpret signs suspicious for malignancy on mammogram such as stellate masses or suspicious micro calcifications.
- vi. Perform open breast biopsies and other operative procedures such as simple mastectomy and excision of intraductal papillomas under direct supervision.
- vii. Demonstrate the ability to satisfactorily orient the surgical specimen for pathologic examination.
- viii. Determine K. the indications and special requirements for tissue processing for estrogen and progesterone receptors.
- ix. Educate patients to perform breast self-examination.
- x. Demonstrate familiarity with male breast problems, including gynecomastia and male breast cancer:
  1. discuss risk factors
  2. outline appropriate work-up and management

**PGY 3 – 5:**

- xi. Independently evaluate a new breast patient by a thorough history and physical examination, ordering appropriate and cost-effective tests such as mammogram, ultrasound, or fine needle aspiration (FNA) or stereotactic breast biopsy (SBB).
- xii. Formulate a diagnostic work-up and treatment plan for most common breast problems, including the common types of breast carcinomas.
- xiii. Consult and interact with members of the professional cancer team in explaining options to the newly diagnosed breast cancer patient.
- xiv. Perform, under direct supervision, more advanced procedures on the breast such as:
  1. radical mastectomy
  2. modified mastectomy
  3. lumpectomy and axillary dissection
  4. sentinel lymph node biopsy
  5. excision of lactiferous duct fistula
  6. needle-localized breast biopsy
  7. simple mastectomy for gynecomastia
  8. Mammo site insertion
- xv. Acquire basic experience with breast reconstruction and cosmetic surgical techniques.
  1. Observation or assistance of plastic surgeon in breast reconstruction via Trans-rectus-abdominal- mastoplasty (TRAM) flap suggested

- xvi. Acquire knowledge of various types of adjuvant treatment such as:
  - 1. chemotherapy
  - 2. hormonal therapy
  - 3. radiation therapy
  - 4. Mammo site
- xvii. Manage unusual breast diseases such as:
  - 1. inflammatory carcinoma
  - 2. Paget's disease
  - 3. lactiferous duct fistula
  - 4. Mondor's disease
  - 5. bilateral breast cancer
  - 6. male breast cancer
  - 7. Cystosarcoma Phylloides
- xviii. Describe the evolving role of bone marrow transplantation in the management of selected breast cancer patients.
- xix. Outline an appropriate follow-up schedule for patients who have undergone:
  - 1. treatment of breast cancer with curative intent
  - 2. treatment of DCIS
  - 3. Biopsy revealing fibroadenoma, benign epithelial hyperplasia or fibrocystic disease with atypia.

**BREAST DISEASE IN THE ELDERLY PATIENT:  
MEDICAL KNOWLEDGE OBJECTIVES:**

**PGY 5**

- xx. Articulate currently accepted guidelines for breast cancer screening in the elderly patient.
- xxi. Describe the demographics of breast cancer in the elderly
- xxii. Describe currently accepted surgical treatment.
- xxiii. Discuss the use of adjuvant chemotherapy.
- xxiv. Describe the barriers that prevent adequate treatment in some elderly women.
- xxv. Discuss appropriate modification of cancer therapy in the frail elderly woman.
- xxvi. Discuss a diagnostic evaluation of the elderly male with a breast lump.
- xxvii. Discuss the treatment of male breast cancer.
- xxviii. Discuss the role of hormonal therapy in older patients.

**d. ENDOCRINE SURGERY:**

There is no specific endocrine surgery rotation within the program. Therefore competency-based goals and objectives for endocrine are achieved during the general surgery rotations.

Endocrine surgery differs from many other areas of surgery in that "Most endocrine surgery cases are considered" senior level," primarily because the cases are infrequent and it takes three or four years before the resident has enough cases to be familiar with a variety of clinical presentations. Within endocrine surgery there are diseases which are relatively common and others which are exceptionally rare.

The emphasis is on acquiring knowledge and surgical treatment of the more common endocrine related surgical diseases. More complex conditions and operations, such as transplant surgery, complicated pancreatic surgeries, and other surgeries requiring

extremely advanced surgical skill and expertise are not routinely allocated to the resident to perform exclusively as chief surgeon.

**a. MEDICAL KNOWLEDGE:**

**PGY 1-2**

- i. Describe the normal anatomy, histology, physiology, and pertinent biochemistry of the following organs:
  1. thyroid gland
  2. parathyroid gland
  3. hypothalamus
  4. pituitary gland
  5. endocrine pancreas
  6. adrenal glands
  7. gastrointestinal tract as endocrine organ
  8. gonads as endocrine organs
- ii. Discuss fully the secretion and the control of the following:
  1. thyroxine and thyroid stimulating hormone (TSH)
  2. parathyroid hormone (PTH)
  3. adrenocorticotropin hormone (ACTH)/cortisol
  4. insulin/glucagon
  5. catecholamines (epinephrine, norepinephrine, dopamine)
  6. gastrin/secretin/cholecystokinin (CCK)
  7. serotonin/histamine
  8. estrogen/progesterone/testosterone (and their releasing factors)
  9. oxytocin/vasopressin
  10. growth hormone (GH)
  11. melanocyte stimulating hormone (MSH)
  12. prolactin
  13. motilin/gastric inhibitory peptide(GIP)/enteroglucagon/ vasoactive intestinal peptide (VIP)
  14. somatostatin
  15. APUD tumors
- iii. Summarize the following aspects of endocrine pathology (thyroid, parathyroid, pancreas, adrenal):
  1. the criteria for the diagnosis of malignancy
  2. chromosomal abnormalities as screening/diagnostic tool
  3. the unique characteristics about the clinical epidemiology of patients with sporadic versus familial disease
- iv. Define and differentiate multiple endocrine neoplasia (MEN) type I, MEN II, and familial non-MEN syndromes

**PGY 3-4**

- v. Outline the approach to surgical management of diseases of various organs of the endocrine system:
- vi. Discuss the pathophysiology, clinical presentation, workup, and treatment of the following disorders:
  1. solitary thyroid nodule
    - a. describe the technique for fine needle aspiration
  2. multinodular thyroid gland

3. thyrotoxicosis
  4. primary, secondary, and tertiary hyperparathyroidism
  5. insulinoma/ gluconoma/ VIPoma
  6. Zollinger-Ellison Syndrome (ZES)
  7. gastrointestinal carcinoid tumors
  8. endogenous hypercortisolism (Cushing's syndrome versus Cushing's disease; pituitary and extra-pituitary sources)
  9. pheochromocytoma
  10. primary hyperaldosteronism
  11. incidentally discovered adrenal mass
  12. galactorrhea
- vii. Discuss the management and pre-operative preparation of patients with the following:
1. hypercalcemia crisis
  2. thyroid "storm"
  3. Graves' disease/Hashimoto's disease
  4. pheochromocytoma
  5. hyperaldosteronism
  6. endogenous hypercortisolism
  7. insulinoma/gastrinoma
  8. carcinoid syndrome
  9. adrenal insufficiency
- viii. Outline the differential diagnosis of:
1. hypercalcemia
  2. hypoglycemia
  3. hypergastrinemia
  4. elevated serum thyroxine level
  5. elevated ACTH levels
  6. a decreased sensitive thyroid stimulating hormone (TSH) level
- ix. Explain the following disease entities as they relate to problems in the elderly patient:
1. Cushing's syndrome
  2. exogenous hypercortisolism
  3. high intake of self-administered " arthritis pills"
  4. chronic alcohol abuse

## **PGY 5**

- x. Demonstrate understanding of the surgical approaches to:
1. the adrenal glands
  2. the pancreas (head, body, tail)
  3. the thyroid gland
    - a. including retrosternal approach
  4. the parathyroid glands
  5. pituitary gland
- xi. Be aware of areas of endocrine surgery in which patient management is controversial and areas in which change is taking place, including:
1. Zollinger-Ellison syndrome
  2. thyrotoxicosis there a night if you will
  3. genetic screening for neuro endocrine syndromes
  4. minimally invasive parathyroidectomy

5. breast cancer gene screening/insurance and worker issues
6. Colon polyposis syndromes **both** familial and nonfamilial
- xii. Summarize the physiologic alterations of the neuro endocrine system that occur with **aging**.
- xiii. Summarize significant issues in the management of anesthesia in endocrine surgery, including:
  1. airway management during neck surgery
  2. cardiovascular manipulation during thyroid and pheochromocytoma operations
  3. special attention to electrolyte management
  4. preparation of patients for pheochromocytoma surgery
  5. preparation and treatment of malignant hyperthermia. (Both surgical and pre-operative)
- xiv. Understand the role of the following in the surgical management of endocrine problems:
  1. localizing modalities (e.g., metaiodobenzylguanidine [MIBG], sestamibi, selective venous sampling, intra operative tumor localization, rapid parathyroid hormone [PTH] assays)
  2. diagnostic assays (e.g., sensitive TSH, C-peptide, fine needle aspiration)

**b. PATIENT CARE AND TECHNICAL SKILLS:**

**PGY 1-2**

- i. Complete a preliminary evaluation of patients suspected of having endocrine disease to include:
  1. focused history
  2. family history
  3. physical examination
- ii. Appropriate relevant diagnostic studies
- iii. Participate in the pre-and post-operative care of patients undergoing endocrine surgery.
- iv. Observe endocrine surgery cases
- v. Manage pre-and post-operative care of patients with endocrine disease, under supervision
- vi. Observe or assist surgery of the thyroid, parathyroid and adrenal glands, as well as those of the pancreas.

**PGY 3-5**

- vii. Develop a comprehensive plan to the surgical management of the patient with endocrine disease.
- viii. Perform or assist in the performance of adrenal, pancreas, thyroid, and parathyroid surgery.
- ix. Evaluate patients with complex endocrine disease and present a differential diagnosis and treatment plan, including referral to a specialized center or facility as indicated

## 5. LIVER, BILIARY TRACT, PANCREAS

Demonstrate knowledge of the anatomy, physiology, and pathophysiology liver, with a tract and pancreas.

Demonstrate ability to manage disease and injury off the liver, biliary tract, and pancreas amenable to surgical intervention.

### I. MEDICAL KNOWLEDGE:

#### PGY 1-2

#### Liver and Biliary Tract

- a. Describe the anatomy of the liver and biliary system, including commonly found variations.
- b. Describe the physiology and function of liver and biliary system to include:
  - i. glucose metabolism
  - ii. protein synthesis
  - iii. coagulation
  - iv. drug metabolism
  - v. reticuloendothelial system
  - vi. function of bile in fat metabolism
- c. Explain the formation of bile, its composition, and function in digestion. Describe the pathophysiology of gallstone formation.
- d. Correlate bile formation and composition with disease states affecting the biliary system such as gallstone formation and biliary obstruction.
- e. Discuss the enterohepatic circulation of bile.
- f. Outline the work-up and differential diagnosis of the jaundiced patient.
- g. Identify the most significant determinants of mortality in **elderly** patients following cholecystectomy.
- h. Discuss various types of liver cyst (non-parasitic and parasitic) and appropriate management of each.
- i. Discuss the principles of treatment for the following:
  - i. metastatic lesions to the liver

- ii. primary malignancies of liver and biliary tree.
  - iii. benign tumors of the liver (solid and vascular)
- j. Summarize the etiologies and management of pyogenic and amoebic abscesses.
- k. Be familiar with the types of Infectious Hepatitis (A,B,C) with:
  - i. modes of transmission
  - ii. diagnosis
  - iii. time course for serologic conversion
  - iv. natural course
- l. outline the pathophysiology, evaluation, and management of the following:
  - i. choledochal cyst
  - ii. Caroli's disease
  - iii. sclerosing cholangitis
  - iv. primary biliary cirrhosis
  - v. secondary biliary cirrhosis
  - vi. cholangitis
  - vii. gallstone ileus
  - viii. gallstone pancreatitis
  - ix. benign biliary strictures
  - x. acute cholecystitis
  - xi. symptomatic gallstones
  - xii. acalculous cholecystitis
  - xiii. biliary dyskinesia
  - xiv. congenital biliary atresia

### **Pancreas (all PGY levels)**

- m. Describe the anatomy of the pancreas, especially vascular and lymphatic drainage, and ductal drainage
- n. Summarize changes that occur in anatomy of the pancreas with **aging**
- o. Discuss the physiology of the pancreas, including endocrine and exocrine function and secretion and hormonal regulation
- p. Pancreatitis (acute and chronic)
  - i. diagnosis, evaluation, and medical management
  - ii. role of peritoneal lavage
  - iii. Describe etiologies and pathophysiology of acute pancreatitis
  - iv. Describe factors determining the severity of pancreatitis
    - 1. Ranson's criteria
    - 2. Serum markers in pancreatitis and pathophysiology and significance
  - v. Describe complications of acute pancreatitis and treatment options
    - 1. Management of gallstone pancreatitis and timing
    - 2. Management of complications of acute pancreatitis (pseudocyst, abscess, necrosis).
  - vi. Define chronic pancreatitis, pathology and pathophysiology
  - vii. Describe the non-surgical treatment therapy for pancreatitis
  - viii. Describe indications for surgical therapy and procedures in acute and chronic pancreatitis
- q. describe the incidence of these diseases in the **elderly**:
  - i. cholelithiasis
  - ii. acute gallstone pancreatitis
  - iii. pancreatic carcinoma
- r. Pancreatic neoplasms:

- i. clinical history and presentation
- ii. diagnostic evaluation using:
  1. computed axial tomography
  2. ultrasound
  3. ERCP
  4. percutaneous transhepatic cholangiography (PTC)
  5. alaparoscopy/laparotomy
  6. Endoscopic ultrasound (EUS)
- iii. indications for:
  1. operative versus nonoperative biliary drainage
  2. percutaneous versus endoscopic stenting
  3. resection
- iv. Operative procedures for pancreatic carcinoma
  1. Describe Whipple procedure
  2. Describe pylorus sparing Whipple procedure
  3. Indications for total pancreatectomy
  4. Describe management of pancreatic fistula/ascites
  5. Describe indications and prognosis for chemotherapy/radiation therapy for pancreatic cancer.
  6. Describe indications for palliative bypass procedures and unresectable pancreatic cancer.
- s. explain the diagnosis and management of pancreatic ascites
- t. Discuss endocrine Pancreatic neoplasms such as:
  - i. Insulinoma
  - ii. Gastrinoma
  - iii. Glucagonoma
  - iv. Somatostatin
  - v. Nonfunctioning islet cell tumors
- u. Discuss exocrine pancreatic neoplasms such as:
  - i. Pancreatic cancer
  - ii. Ampullary adenomas
  - iii. Cystic neoplasms of the pancreas
    1. Benign
    2. Borderline
    3. Malignant
  - iv. Pseudo-papillary and papillary-cystic neoplasms
  - v. Pancreatic lymphoma

## **PGY 3-4**

### **LIVER AND BILIARY TRACT**

- v. discuss alternatives to surgical management of gallstones, such as:
  - i. oral dissolution with ursodeoxycholic acid
  - ii. extracorporeal shock wave lithotripsy
  - iii. endoscopic sphincterotomy
- w. compare laparoscopic versus open cholecystectomy
- x. analyze the potential significance of finding a filling defect on ultrasonography or liver scan in elderly patients.
- y. discuss management alternatives for common bile duct stones:
  - i. open versus laparoscopic common bile duct exploration

- ii. ERCP
- z. discuss the etiology and pathophysiology of hepatic cirrhosis and portal hypertension
- aa. medical management of ascites, encephalopathy, and other complications of cirrhosis
  - i. Childs classification of cirrhosis and other scoring systems and its relationship to prognosis and surgical mortality
- bb. medical management of bleeding esophageal varices using vasopressin, Sengstaken-Blakemore tube, sclerotherapy, and transjugular intrahepatic portosystemic shunts (TIPS)
- cc. surgical management of bleeding esophageal varices:
  1. selection of operative candidates
  2. types of procedures
- dd. surgical management of ascites with peritoneovenous shunts to include patient selection and complication
- ee. Outline indications and contraindications for liver transplantation in adults and children
- ff. factors important to the choice of treatment options for the elderly patients with hepatobiliary disease, including comorbidities, prognosis, and quality of life issues

### **Pancreas**

- gg. describe the etiology, pathophysiology, and management of chronic pancreatitis to include:
  - i. indications for operative management
  - ii. selection of appropriate operative procedures
  - iii. role of celiac ganglion ablation (chemical splanchnicectomy) in pain control
- hh. Discuss diagnosis, evaluation, and surgical management of cystic neoplasms of the pancreas (mucinous and serous cystadenomas; cystadenocarcinoma).
- ii. describe the diagnosis, evaluation and surgical management of islet cell tumors of the pancreas (gastrinoma, glucagonoma, somatostatinoma, insulinoma, VIPoma)

### PGY-5

- jj. detail the appropriate surgical management of any selected disorders of the liver or biliary tract
- kk. analyze the technical details in each surgical procedure and options that may be available with pros and cons of each
- ll. summarize the common complications associated with surgical management of liver and biliary tract disease
- mm. summarize the principles and perioperative management of liver and biliary tract disease

### **Pancreas:**

- nn. outline the appropriate surgical management, including patient selection and pre-operative preparation of patients with disorders of the pancreas to include:
  - i. pancreaticoduodenectomy (Whipple Procedure)
  - ii. distal pancreatectomy
  - iii. total pancreatectomy
  - iv. subtotal (distal 95%) pancreatectomy

- v. longitudinal pancreatic orange aging ostomy (Puestow Procedure)
- vi. intra or drainage of pseudocysts (cystogastrostomy, cystoduodenostomy, Roux-en-Y cystojejunostomy)
- oo. describe the common complications associated with surgical management of diseases of the pancreas

## **2. PATIENT CARE AND TECHNICAL SKILLS**

### **PGY 1-2**

#### **LIVER AND BILIARY TRACT**

- pp. perform a history and physical examination specifically focused on liver and biliary system
- qq. select and interpret appropriate laboratory and radiologic evaluations in the work-up of the jaundiced patient
- rr. assist in the perioperative management of patients undergoing hepatobiliary surgery
- ss. assist in the management of patients with bleeding esophageal varices i
- tt. assist or perform, under direct supervision, common hepatobiliary surgery such as cholecystectomy, both laparoscopic and open, with or without operative cholangiography.
- uu. Assist in more advanced hepatobiliary operations
- vv. Participate in the post-operative management of patients undergoing hepato-biliary surgery

#### **PANCREAS**

- ww. perform history and physical examination focused on the pancreas
- xx. select and interpret appropriate laboratory and radiologic examinations in evaluation of pancreatic disease,
- yy. assist in management of patient with acute pancreatitis
- zz. assist in the perioperative management of patients undergoing pancreatic surgery
- aaa. assist in minor pancreatic procedures such as external drainage of pseudocyst or internal drainage via cystogastrostomy.

### **PGY 3-4**

#### **LIVER AND BILIARY TRACT**

- bbb. perform detailed evaluation of patients with liver and biliary disease and plan appropriate management and operative approach
- ccc. perform, under supervision, increasingly complex hepatobiliary surgery, such as:
  - i. laparoscopic cholecystectomy with cholangiography
  - ii. common bile duct exploration with choledochoscopy
  - iii. biliary duct procedures such as:
  - iv. simple liver resection

## **PANCREAS**

- ddd.** Perform detailed evaluation of patients with pancreatic disease and plan appropriate medical or surgical management
- eee.** perform increasingly complex pancreatic surgery such as:
  - i. internal drainage of pseudocyst with Roux-en-Y cystojejunostomy
  - ii. longitudinal pancreaticojejunostomy (Puestow Procedure)
  - iii. distal pancreatectomy
  - iv. biliary bypass for carcinoma

## **PGY-5**

### **LIVER AND BILIARY TRACT**

- fff.** coordinate overall care of patients with hepatobiliary disease including:
  - i. initial evaluation
  - ii. appropriate diagnostic studies
  - iii. indicating consultations
  - iv. operative management
- ggg.** perform complex hepatobiliary surgery:
  - i. Be familiar with anatomic liver resection
  - ii. perform limited liver resection surgery
    - 1. wedge resections
    - 2. limited left lateral lobe resection
  - iii. Be familiar with portosystemic shunts such as:
    - 1. portacaval, end-to-side and side-to-side
    - 2. mesocaval
    - 3. distal splenorenal (Warren)
    - 4. central splenorenal
  - iv. complicated procedures on extrahepatic bile ducts for:
    - 1. cholangiocarcinoma (if readily resectable and under staff supervision)
    - 2. choledochal cyst
    - 3. benign biliary stricture
  - v. be familiar with liver transplantation, indications and technique
  - vi. be familiar with Kasai procedure (hepatportoenterostomy)
- hhh.** supervise and instruct junior house officer in minor hepatobiliary procedures

## **PANCREAS**

- iii.** coordinate overall care of patients with complex pancreatic disease, including initial evaluation, appropriate diagnostic studies, and operative management of:
  - i. pancreatic abscess and infected pancreatic necrosis
  - ii. cystadenomas
  - iii. periampullary carcinoma
  - iv. endocrine tumors of the pancreas
- jjj.** perform complex pancreatic procedures such as:
  - i. Whipple resection
  - ii. total or subtotal pancreatectomy
  - iii. operative debridement and drainage of pancreatic abscess or infected necrosis

- iv. surgical aspiration for islet cell tumors of the pancreas
- v. local resection for ampullary tumors
- vi. supervise and instruct junior house staff in minor pancreatic procedures

**e. DISEASES OF THE VASCULAR SYSTEM – (see vascular goals and objectives)**

**f. DISEASES OF THE HEAD AND NECK**

Residents will gain medical knowledge and understanding of a variety of head and neck conditions, including pre-op diagnosis, formulation of treatment plan, choice of procedure, preparation for surgery, post operative care and follow up and

**MEDICAL/SURGICAL KNOWLEDGE:**

**PGY 1-2 level**

- a. Identify the anatomy and explain the physiology of the ear, nose, oral cavity, and throat.
- b. Summarize the essential components of a focused history and physical exam of common head and neck problems.
- c. describe and compare the pathophysiology of the following head and neck diseases:
  - i. sinusitis
  - ii. sialadenitis
  - iii. neck abscess
  - iv. epiglottitis
- d. Evaluate patients with facial trauma and develop a treatment plan for the management of:
  - i. fractures
  - ii. lacerations
  - iii. hemotympanum
  - iv. epistaxis
- e. List the indications for tracheostomy in adults and children.
- f. List the indications for biopsy of lesions of the skin of the face, neck, and oral cavity.
- g. Outlined in diagnostic approaches to head and neck neoplasia, including:
  - i. direct visualization
  - ii. indirect visualization
  - iii. use of radiography
  - iv. fine-needle biopsy

**PGY 3-5 level**

- h. describe diagnostic and therapeutic procedures utilized in treating the following:
  - i. abscess
  - ii. neck mass
  - iii. oral ulcer
  - iv. salivary gland mass
- i. Describe and demonstrate methods for removing foreign bodies of the trachea, bronchus, and esophagus.

- j. Outline the diagnosis and repair of facial fractures of the mandible, nose, and frontal sinus.
- k. Summarize diagnostic and therapeutic considerations in management of cost to injury to the mouth, nasopharynx, tracheal, and esophagus.
- l. Discuss the management of airway in patients with terminal carcinoma of the thyroid and trachea.
- m. define and discuss the three-dimensional anatomy of the head and neck region with regard to:
  - i. interrelationships of anatomy
  - ii. fascial planes
  - iii. path and course of cranial nerves
  - iv. major arterioles and venous structures
  - v. musculature of face and neck
  - vi. anatomy of larynx and cervical trachea
  - vii. location of cricothyroid membrane
  - viii. cervical anatomy of nasopharynx, pharynx, esophagus
- n. Identify the bones of the skull, face, and cervical spine. Explain relationship to major neurologic and neurovascular structures of the head and neck.
- o. Analyze predisposing factors for head and neck cancer.
- p. Differentiate between neoplastic and non-neoplastic neck masses.
- q. Explain the tumor, nodes, and metastases (TNM) classification system for tumors of the head and neck.
- r. Prepare a protocol for evaluating intraoral cancer.
- s. Indicate how to examine a patient with severe facial laceration to rule out damage to the following:
  - i. lacrimal drainage system
  - ii. parotid gland and duct
  - iii. facial nerve
- t. identify and delineate
  - i. pathophysiology of cranial nerve dysfunctions and injuries
  - ii. brachial plexus injuries
  - iii. anatomy/location of parotid and submandibular ductal drainage systems
- u. Define and describe the Le Fort maxillary fracture classification system.
- v. Identify and delineate zones I, II, and III of penetrating injuries to the neck and their associated management.
- w. Describe the roles of the following diagnostic modalities in evaluation of head and neck lesions and facial fracture:
  - i. plain x-rays
  - ii. CT scanning
  - iii. sialography
  - iv. isotope scans
  - v. ultrasound
  - vi. magnetic resonance imaging (MRI)
- x. Describe the anatomy of the fascial spaces of the neck.
- y. Describe radical and modified radical neck dissection, and the indications for each.
- z. describe the anatomy and advantages and disadvantages of regional flaps available for head and neck reconstruction
- aa. Discuss the advantages and disadvantages of irradiation, chemotherapy, and resection of neoplastic lesions of the:
  - i. tongue

- ii. floor of mouth
  - iii. buccal mucosa
  - iv. retromolar trigone
  - v. alveolar ridge
  - vi. palate
- bb. Discuss the frequency of benign and malignant head and neck tumors in the pediatric population.
- cc. Outline the microbiology and treatment of deep neck abscesses.

## **2. PATIENT CARE AND TECHNICAL SKILLS:**

### **PGY 1-2 level**

- a. Perform and record a focused head and neck history and physical examination.
- b. manage the emergent/elective airway; using visual inspection, radiographic evaluation, indirect invasive and non-invasive visualization techniques (direct speculum indirect mirror evaluations, and fiber-optic and rigid evaluations); with consideration for:
  - i. nose, nasal passages
  - ii. nasopharynx
  - iii. oropharynx
  - iv. larynx
  - v. trachea
- c. be prepared to manage airway obstruction as the result of:
  - i. edema,
  - ii. secretion
  - iii. anaphylaxis
  - iv. foreign body
  - v. benign and malignant tumors (including, vascular malformations and infectious processes)
- d. Evaluate patients with facial trauma, including fractures, lacerations, hemotympanum and, epistaxis.
- e. Perform tracheostomy on adults under direct supervision.
- f. Perform biopsies of lesions of skin of face, neck, and oral cavity.
- g. Perform evaluation of the neck mass, and provide appropriate treatment.
- h. Correctly differentiate between the indications for and management of cricothyroidotomy and tracheostomy, demonstrating varying techniques and choice of instrumentation from the emergent airway management and ventilation in each.

### **PGY 3-5 level**

- i. Perform simple endoscopy including:
  - i. nasopharyngoscopy
  - ii. direct laryngoscopy
  - iii. esophagoscopy
- j. Evaluate head and neck tumor patients, and be prepared to perform the tumor biopsy.
- k. Evaluate radiologic studies of the head and neck, including computerized axial tomography (CAT) scanning.
- l. Evaluate and treat head and neck abscesses and other masses.
- m. Remove esophageal foreign bodies endoscopically.
- n. Describe Reconstruction of facial and neck defects with transposition and myocutaneous flaps.

- o. Diagnose facial fractures and coordinate management with appropriate consultation.
- p. Evaluate and treat caustic injury
- q. Manage the airway in patients with terminal thyroid or tracheal carcinoma or describe steps for which can be taken in the face of this situation.
- r. Provide emergency airway management, including performance of:
  - i. intubation
  - ii. emergency cricothyrotomy
  - iii. emergency tracheostomy
- s. administer treatment for sialadenitis
- t. diagnosing evaluate infectious illness (viral, bacterial, fungal), acute and chronic, affecting:
  - i. sinuses
  - ii. bones
  - iii. soft tissues of face
- u. demonstrate a clear understanding of the pathophysiology of:
  - i. Ludwig's angina
  - ii. necrotizing fasciitis of the neck
  - iii. mucormycosis of sinus
  - iv. epiglottitis
- v. Perform biopsy of all intraoral lesions.
- w. Care for contaminated wounds, including animal bites of face and neck.
- x. Assist with incisions for head and neck surgery, including:
  - i. radical neck dissection
  - ii. salivary gland surgery
  - iii. tracheostomy
  - iv. laryngeal/tracheal trauma
  - v. special considerations for incisions in previously irradiated tissues
- y. Formulate a plan for the management of unknown primary tumor of the head and neck.
- z. Perform fine-needle biopsies under supervision
- aa. Perform simple operative incisions under direct supervision (tracheostomy, intubation, simple lesions of head and neck).
- bb. Perform simple operative incisions with direct supervision.
- cc. Describe, assist at, perform radical neck dissection under direct supervision
- dd. manage postoperative complications
- ee. manage trauma of the upper airway.

**GENERAL SURGERY (ALIMENTARY, ABDOMEN, BREAST, LIVER, BILIARY, PANCREAS AND BREAST) - OTHER CORE COMPETENCIES**

As with the medical knowledge and patient care competencies, skill and experience in each of these competencies is acquired and developed on a continuing basis. A resident at any given training level is expected to continue to build on their skills acquired at the previous level. Each skill described below are considered minimums expectations for attainment, and residents are encouraged to exceed these expectations.

## **C: INTERPERSONAL AND COMMUNICATION SKILLS**

- i. **PGY 1**
  - i. convey important clinical information in a timely fashion to other team members
  - ii. establish rapport with patients and their families, especially under stressful circumstances
  - iii. engage patients in shared decision-making, and participate in family discussions
  - iv. develop the practice of accurate and complete documentation in the medical record (electronic or paper)
  - v. begin developing sensitivity in patient interactions to patient cultural and socioeconomic needs
  - vi. begin development and familiarity of the elements of good communication and relationship with other team members to enhance patient outcomes and promote patient safety
- ii. **PGY 2**
  - i. continued development of good team relationships and communication conducive to good patient care and patient safety
  - ii. develop the ability to communicate complex medical information to patients and families in a clear, comprehensible manner
- iii. **PGY 3**
  - i. developing leadership skills and effective communication skills in the management of junior residents and off service residents
  - ii. assist junior peers, medical students, and other hospital personnel in fostering good team relationships
  - iii. continued development of communication skills with patients and families about treatment options, as well as non-clinical issues; begin acquiring skill in managing difficult patient or family encounters (with or without supervision)
- iv. **PGY 4-5**
  - i. residents will function as team leaders with little or no reliance upon attending faculty, but maintain close communication with attending faculty as team members.

## **D. PROFESSIONALISM**

### **ALL RESIDENT LEVELS**

- i. All residents are expected to demonstrate behavior, dress, and interactions that embody an ethical surgeon.
- ii. Demonstrate compassion and respect for all patients, and sensitivity to patient age, gender, sexual orientation, cultural/religious and socioeconomic factors
- iii. All residents are expected to complete required administrative and educational tasks and assignments on time, or when requested by the program leadership
- iv. All residents are expected to comply with applicable ACGME rules and regulations, and all institutional and statutory rules
- v. All residents will demonstrate a commitment to personal and professional development and improvement, including responding positively to feedback concerning any deficiencies and using these as an opportunity for improvement
- vi. All residents will be expected to participate, as much as feasible, in required didactic sessions, research, and other educational efforts

**Senior level residents (PGY 3 – 5)**

In addition to the professionalism requirements expected of all residents, senior level residents will be expected to exhibit ethics, behavior, conduct and work habits at a high level of professional performance, and serve as the model for lower level residents especially, as well as other team members and patients and families.

**E. PRACTICE-BASED LEARNING AND IMPROVEMENT**

**ALL RESIDENT LEVELS**

- i. will develop the skill to use print and on-line resources (including the assistance of knowledge services personnel) to critically appraise medical literature and apply this evidence to patient care
- ii. will develop the skills and habits of a self-directed learner
- iii. will be expected to master the use of electronic resources to support patient care as well as for self-directed learning

**PGY-1:**

- i. beginning skill in recognizing performance or knowledge gaps
  - a. develops practice of seeking out expert or experienced advice or assistance for the purpose of addressing performance gaps
  - b. develops a plan to self-address performance or knowledge gaps
- ii. beginning skill in tracking their individual performance through use of databases

**PGY-2:**

- i. continued development of skills outlined under PGY-1
- ii. analyzes adverse outcomes, and beginning skills in identifying causative or contributing factors

**PGY-3:**

- i. developing systematic approach to patient care outcomes
- ii. identifying and analyzing root causes, and potential solutions and interventions (both individual and system)

**PGY-4**

- i. demonstrate advanced skill in analyzing patient outcomes
- ii. readily identify causative or contributing factors, and seeks preventative measures (individual or system)

**PGY-5**

- i. demonstrate high skill in tracking and analyzing patient outcomes on an individual and system basis
- ii. involved in patient safety and quality efforts

a.

**PGY 3-5:** In addition to the above, senior level residents will model self-directed learning and mentor junior level residents

**F. SYSTEMS BASED PRACTICE**

**PGY-1:**

- i. develop skill in navigating electronic health records
- ii. begin acquiring knowledge and awareness of health system elements and resources
- iii. begin acquiring skill in coordinating care with other team members and system resources to enhance patient outcomes and promote patient safety
- iv. begin acquiring knowledge and awareness of health care costs, quality, and provision (including access and barriers to care)

**PGY-2:**

- i. continued development of PGY-1 skills
- ii. emerging skill in tracking and analyzing patient outcomes
- iii. acquire knowledge of the role of clinical practice guidelines and protocols, their use, and their limitations
- iv. participate on hospital committees devoted to patient care quality and safety

**PGY-3:**

- i. continued development of skills acquired in PGY-1 and 2
- ii. demonstrate good skill in tracking and analyzing patient outcomes

**PGY-4:**

- i. demonstrates high level of skill in analyzing outcomes
- ii. identifies opportunities for improvement in patient care

**PGY-5:**

- i. Models safe, cost-effective care
- ii. Demonstrates continuous effort in improving patient care outcomes and safety
- iii. Supervises lower level residents in these efforts

**BREAST, COLO-RECTAL – OTHER CORE COMPETENCIES**

In addition to the competency skills outlined above for General Surgery, additional competency skills for breast and colo-rectal may be found under the individual rotation goals and objectives for these subspecialties.

**HEAD AND NECK - OTHER CORE COMPETENCIES**

In addition to the competency skills outline for General Surgery listed above, additional competency skills in dealing with patients with head and neck disease are as follows:

- 3. INTERPERSONAL AND COMMUNICATION SKILLS (ALL PGY levels)** Resident will gain knowledge and skill in psychosocial issues concerning:
  - i. discuss patients fears regarding prognosis and outcome with various head and neck diseases, including concerns over cosmesis
  
- 4. PROFESSIONALISM (ALL PGY levels)**
  - i. Understand the dynamics in working with patients with advanced head and neck neoplastic disease regarding advanced directives, DNR status, futility, and withholding/withdrawing therapy
  - ii. Identify and assist with the psychological stress of patients with chronic disability from head and neck neoplastic disease as it affects their personal life, their family life, and their socioeconomic environment
  
- 5. PRACTICE-BASED LEARNING AND IMPROVEMENT (ALL PGY levels)**
  - i. exhibit self-directed learning in head and neck related basic science and clinical management
  
- 6. SYSTEMS BASED PRACTICE (ALL PGY levels)**
  - i. demonstrate awareness of appropriate resources for the multi-disciplinary treatment of head and neck neoplasms, including speech therapy, palliative resources