

# ACUTE CARE SURGERY (GOLD) ROTATION

## CORE OBJECTIVES

### GOALS

Through rotation on the Gold surgery service, residents shall attain the following goals:

#### I. Patient Care

A. Preoperative Care: Residents will evaluate and develop a plan of care for preoperative patients with general surgical conditions. The plan shall include any interventions that will successfully prepare a patient for surgery.

##### 1. Setting

- a. Out-patient clinic attendance
- b. Hospital consultation service

##### 2. Evaluation:

- a. Obtain and interpret appropriate laboratory tests
- b. Obtain and interpret appropriate radiologic tests
- c. Assess cardiopulmonary suitability for surgery and obtain appropriate evaluations and testing and/or institute appropriate pharmacological preventive therapy
- d. Evaluate the need for preoperative nutritional therapy
- e. Participate in the informed consent process for patients being scheduled for an elective procedure or surgery

- i. PGY-1 (junior) residents shall participate in the informed consent process for simple procedures and operations, e.g. central venous access, tube thoracostomy, inguinal hernia, peritoneal dialysis catheter placement, simple incisional hernia
- ii. PGY 4-5 (senior) residents shall participate in the informed consent process for simple and complex procedures and operations, e.g. colectomy for cancer, breast cancer procedures, gastric bypass surgery, splenectomy

B. Operative Care: Gain an experience that will build toward being competent in the performance of surgeries and endoscopic procedures. PGY levels indicate the level of resident most appropriate to participate. This does not preclude a more senior or more junior resident from participating if there is no level appropriate resident available.

##### 1. Procedure as assistant of junior surgeon to the attending surgeon

- a. Groin Hernia, open (PGY 1, 4-5)
- b. Groin Hernia, laparoscopic (PGY 4-5)
- c. Abdominal wall hernia, open: umbilical, incisional, recurrent (PGY 1-5)
- d. Abdominal wall hernia, laparoscopic: umbilical, incisional, recurrent (PGY 1-5)
- e. Breast biopsy (PGY 1, 4-5)
- f. Mastectomy, simple (PGY 1, 4-5)
- g. Modified radical mastectomy (PGY 1, 4-5)
- h. Breast lumpectomy with sentinel node biopsy / axillary dissection (PGY 1, 4-5)

- i. Thyroidectomy, partial/total (PGY 4-5)
  - j. Parathyroidectomy (PGY 4-5)
  - k. Adrenalectomy, open laparoscopic (PGY 4-5)
  - l. Placement of venous catheter (PGY 1, 4-5)
  - m. Exploratory laparotomy (PGY 1, 4-5)
  - n. Diagnostic laparoscopy (PGY 1, 4-5)
  - o. Esophagogastric fundoplication, open/laparoscopic (PGY 1, 4-5)
  - p. Esophagectomy (PGY 4-5)
  - q. Esophagogastric myotomy, open (PGY 4-5)
  - r. Esophagogastric myotomy, laparoscopic (PGY 4-5)
  - s. Gastrectomy, partial (PGY 3-5)
  - t. Gastrectomy, total (PGY 4-5)
  - u. Small bowel resection (PGY 1, 4-5)
  - v. Appendectomy (PGY 1, 4-5)
  - w. Colectomy, right (PGY 1, 4-5)
  - x. Colectomy, laparoscopic (PGY 1, 4-5)
  - y. Colectomy, left/total (PGY 1, 4-5)
  - z. Low anterior resection (PGY 4-5)
  - aa. Abdominoperineal resection (PGY 4-5)
  - bb. Cholecystectomy, open (PGY 1, 4-5)
  - cc. Cholecystectomy, laparoscopic (PGY 1, 4-5)
  - dd. Bile duct exploration, open (PGY 1, 4-5)
  - ee. Bile duct exploration, laparoscopic (PGY 1, 4-5)
  - ff. Pancreatectomy, partial/total; open/laparoscopic (PGY 4-5)
  - gg. Pancreatic pseudocyst drainage (PGY 4-5)
  - hh. Pancreatic debridement (PGY 4-5)
  - ii. Liver resection (PGY 4-5)
  - jj. EGD/Colonoscopy, diagnostic/PEG (PGY 1)
  - kk. EGD/Colonoscopy, therapeutic (PGY 1)
  - ll. Splenectomy, open/laparoscopic (PGY 1, 4-5)
  - mm. Tracheostomy (PGY 1, 4-5)
  - nn. Enterolysis (PGY 1, 4-5)
  - oo. Soft tissue mass/infection/abscess, simple (PGY 1)
  - pp. Soft tissue mass/infection/abscess, complex (PGY 1, 4-5)
2. Dexterity: residents shall learn to display and perform the above operations with manual dexterity appropriate for their level
- a. PGY-1 (junior) residents shall gain facility with operative techniques as assistants on their initial operative experiences with the expectation that they will be able to be a junior surgeon for low complexity procedures by the end of their 1<sup>st</sup> year
  - b. PGY 4-5 (senior) residents shall gain facility with techniques as assistants on their initial operative experiences for cases of high complexity with the expectation that they will be able to be a junior surgeon for complex procedures by the end of their 5<sup>th</sup> year
- C. Postoperative Care: residents shall develop and follow through with a plan of care for the general surgical patient. This plan will include how to facilitate the recovery of patients undergoing abdominal wall, breast, esophageal, gastric, small bowel, large bowel, adrenal, splenic,

hepatobiliary, pancreatic, thyroid, parathyroid, skin & soft tissue, laparoscopic, and endoscopic procedures

1. Setting:
  - i. Out-patient Surgery area
  - ii. Inpatient floor
  - iii. Out-patient clinic
2. Through evaluation of the postoperative patient, the resident shall be able to assess and manage:
  - a. Bowel function: distinguish active bowel function from adynamic ileus and/or bowel obstruction
  - b. Pain management: evaluate patients for pain and the adequacy of their postoperative pain management regimen
    - i. Evaluate the use and effectiveness per oral and intravenous pain medications
    - ii. Evaluate the use and effectiveness of patient controlled anesthetic units
    - iii. Evaluate the use and effectiveness of epidural anesthesia
  - c. Wound care and healing
    - i. Identify and treat infected wounds
    - ii. Identify and treat wound seromas
    - iii. Identify and treat wound dehiscence
  - d. Fluid and electrolyte abnormalities after surgery
  - e. Use and care of surgical drains
  - f. Identify infection: surgical site, blood, genitourinary, pulmonary, catheter-related, intraabdominal abscess, and bowel anastomotic disruption
  - g. Identify and treat cardiopulmonary complications: myocardial infarction, pulmonary edema, atelectasis, pulmonary embolism, and pneumonia
  - h. Identify and treat of renal impairment/failure: pre-renal azotemia, acute renal failure, and IV-dye associated renal impairment
  - i. Identify the need for parenteral nutrition and employ its use
  - j. Identify a patient's readiness for discharge
  - k. Identify a patient's need for rehabilitation or nursing home placement

Resident expectation by level

- a. PGY-1 (junior) residents shall gain an experience in how to recognize and differentiate the above problems and conditions and be able to formulate and institute a strategy of care with the assistance of more senior residents or staff

- b. PGY- 4-5 (senior) residents shall be able to recognize and differentiate the above problems and conditions and be able to formulate and institute a strategy of care independently
- D. Emergent/Urgent Care: Residents will evaluate and manage emergent/urgent general surgical conditions
- 1. Setting
    - Outpatient clinic
    - a. Inpatient consult service
    - b. Emergency Department
  - 2. Emergent conditions: residents shall learn to recognize and manage
    - i. Perforated hollow viscous
    - ii. Acute inflammatory diseases of the alimentary tract (cholecystitis, colitides, Crohn's disease, ulcerative colitis, appendicitis)
    - iii. Breast infection/inflammation
    - iv. Endocrine gland: thyroid and parathyroid gland hyperfunction, inflammation, infection
    - v. Gastrointestinal hemorrhage
    - vi. Soft tissue infections
    - vii. Mesenteric ischemic disease of the small and large bowel
    - viii. Infected prosthesis: ports, central lines, mesh
  - 3. Management
    - a. Evaluation: residents shall learn to evaluate patients with the above emergent conditions through history & physical examination and decide upon a plan of care including the need for further evolution by other specialties, laboratory testing, or radiologic testing
      - i. PGY-1 (junior) residents shall gain an experience in how to recognize and differentiate
      - ii. PGY- 4-5 (senior) residents shall be able to recognize and differentiate and formulate a definitive plan of care
    - b. Resuscitation: residents shall learn to identify the need for resuscitation of a patient with an emergent surgical condition including the need for optimization and monitoring of the patient in an ICU or "step-down" setting
      - i. PGY-1 (junior) residents shall gain an experience in how to recognize the appropriate setting of care

- ii. PGY- 4-5 (senior) residents shall be able to recognize and differentiate patients needing differing levels of care independently
- c. Operation: residents shall learn to make a judgment, based upon their evaluation, whether a patient's condition warrants urgent or emergent operative therapy. A judgment of what the appropriate operation to be performed should be made
  - i. PGY-1 (junior) residents shall gain an experience in how to recognize patients in need of urgent or emergent operative therapy
  - ii. PGY- 4-5 (senior) residents shall be able to recognize and differentiate patients needing urgent or emergent operative therapy independently
- d. Postoperative: residents shall learn to make a judgment of the appropriate postoperative disposition for patients with urgent/emergent surgical conditions
  - i. Critically ill – ICU
  - ii. Stable in need of further monitoring – “step-down” unit
  - iii. Stable – floor
  - iv. PGY-1 (junior) residents shall gain an experience in how to recognize and differentiate the level of care necessary for patients after an urgent or emergent operation
  - v. PGY- 4-5 (senior) residents shall be able to recognize and differentiate the level of care necessary for patients after an urgent or emergent operations independently

## II. Medical Knowledge

- A. Didactics: residents are expected to attend and participate in the weekly didactic sessions including the basic science course, case conference, M&M, Grand Rounds, and the Junior & Senior resident discussion sessions, as appropriate by level.
- B. Residents are expected to attend Tumor Board when a patient on the service is to be discussed.
- C. Residents are expected to take part in the Multidisciplinary Breast Cancer Conference.
- D. It is expected that residents will be participants in their own education upon the scientific information relating to general surgery.
- E. System function: residents shall gain an understanding of the anatomy, physiology, and function of organs and organ systems affected by general surgical conditions and operative procedures
  - 1. PGY-1 (junior) residents shall reacquaint themselves with the basic physiology and function of the organs and systems, and they shall learn how they are affected by general surgical conditions and operations

2. PGY- 4-5 (senior) residents shall be able to teach the anatomy, physiology, and function of organs and organ systems affected by general surgical conditions and operative procedures
- F. Disease process: residents shall become familiar with the various disease processes affecting the organ systems commonly seen in general surgical patients. The recommended texts by the department are Sabiston: Textbook of Surgery and O’Leary’s The Physiologic Basis of Surgery. These texts should serve as a basis for reference and residents are encouraged to peruse other sources both in print or online more specific to General Surgery. It is expected that residents on the General Surgery Service will read about the various disease processes that they encounter in the clinic, on the wards and in the operating room.

G. Surgery

1. Techniques: residents shall learn and become familiar with the various endoscopic and surgical techniques employed for the treatment of the various general surgical disease processes, as exemplified in I.B.1)(a-pp)
2. Residents shall learn the appropriateness of the application of surgical or endoscopic therapy
3. Complications and management: residents shall gain an experience in recognizing and managing medical and surgical complications of procedures and therapies for and related to the procedures listed in I.B.1(a-pp)
4. It is expected that resident shall prepare for the operating room by reading about the procedure to be done and therefore familiarizing themselves with the available and appropriate techniques to accomplish the surgical goal.
  - a. PGY-1 (junior) residents shall gain an experience in how to recognize and differentiate potential complications of a procedure or operation
  - b. PGY- 4-5 (senior) residents shall be able to recognize and differentiate potential complications of a procedure or operation independently
5. Follow-up therapy: residents shall gain an understanding of the follow-up needed and recommended for various general surgical procedures
  - a. Setting:
    - i. Out-patient Surgery area: residents shall learn to assess the suitability of a patient for discharge after an outpatient procedure.
    - ii. Inpatient floor: residents shall learn the appropriate intervals for follow-up of a patient discharged from the General Surgery service depending upon disease process and the type of surgery or non-operative therapy performed.
    - iii. Out-patient clinic: residents shall learn the follow-up intervals used to evaluate patients after various surgeries or non-operative therapies.
6. Gain an understanding of the utility, appropriateness, and use of diagnostic modalities used in both the inpatient and outpatient settings for the evaluation of:

- a. Organ or organ system
  - i. Abdominal wall
  - ii. Breast
  - iii. Skin and soft tissue
  - iv. Endocrine glands
  - v. Gastrointestinal tract
  
- b. Evaluation Modality
  - i. Ultrasound
  - ii. CT scan
  - iii. MRI
  - iv. Nuclear medicine studies
  - v. Contrast studies of the gastrointestinal tract
  - vi. 24-hour pH analysis
  - vii. Esophageal manometry
  - viii. Fine needle and core needle biopsy
  
- c. PGY-1 (junior) residents shall gain an experience in how to recognize and differentiate the available options for an evaluation and be able to decide on the appropriate test for simple problems, e.g. ultrasound for suspected gallstone disease
  
- d. PGY- 4-5 (senior) residents shall be able to recognize and differentiate the available options for an evaluation and be able to decide on the appropriate test for problems ranging from simple to complex independently

### III. Practice-based Learning

A. Residents are expected to critique their performance and their personal practice outcomes

- 1. Morbidity & Mortality Conference – Discussion should center on an evidence based discussion of quality improvement.
- 2. Residents shall keep logs of their cases and track their operative proficiency as gauged by whether they assisted or were the surgeon junior or senior or teaching assistant

### IV. Interpersonal and Communication Skills

- A. Residents shall learn to work effectively as part of the general surgical team.
- B. Residents shall foster an atmosphere that promotes the effectiveness of each member of the general surgical team
- C. Residents shall interact with colleagues and members of the ancillary services in a professional and respectful manner.
- D. Residents shall learn to document their practice activities in such a manner that is clear and concise
- E. Residents shall participate in the informed consent process for patients being scheduled for elective and emergent/urgent procedures or surgery

F. Residents shall gain an experience in educating and counseling patients about risks and expected outcomes of elective or emergent/urgent procedures or surgeries

G. Residents shall learn to give and receive a detailed sign-out for each service

## V. Professionalism

A. Residents shall maintain high ethical standards in dealing with patients, family members, patient data, and other members of the healthcare team

B. Residents shall demonstrate a commitment to the continuity of care of a patient within the confines of the duty-hour restrictions

C. Residents shall demonstrate sensitivity to age, gender, and culture of patients and other members of the healthcare team

## VI. Systems-based Practice

A. Residents shall learn to practice high quality, cost effective, patient care. This knowledge should be gained through discussions of patient care.

### 1. Conferences

- a. M&M
- b. Tumor Board
- c. Breast Conference

### 2. Other

- a. Gold Surgery Rounds
- b. Outpatient clinic

3. Zone 1: clavicle to cricoid; Zone 2: cricoid to angle of mandible; Zone 3: above angle of mandible.

4. Exploration involves visualizing the wound tract, exploring the carotid sheath, and fully visualize the trachea and esophagus.

## “Positive Findings”

### Vascular Exam

- Active bleeding; Hypotension; Large or expanding hematoma; pulse deficits (carotid, brachial/radial), bruit

### Aerodigestive Exam:

- Hemoptysis/hematemesis; Air bubbling; Subcutaneous Emphysema; Hoarseness; Dysphagia

### Neurologic Exam:

- Localizing Signs: Pupils; Limbs, CNs

- CNs: Facial; Glossopharyngeal (midline position of soft palate); Recurrent Laryngeal (hoarseness, ineffective cough); Accessory (shoulder lift); Hypoglossal (midline position of tongue)
- Horner's Myosis; Ptosis
- Brachial Plexus; Median (fist); Radial (wrist extension); Ulnar (abduction/adduction of fingers); Musculocutaneous (forearm flexion); Axillary (arm abduction)

*Reference:*

- *Biffi WL et al. AM J Surg 1997, 184:678-682*
- *Demetriades D et al. World J Surg 1999; 21:41-48*
- *Gracias VH et al. Arch Surg 2001; 136:1231-1235*
- *Sekharan J et al. J Vasc Surg 2000; 32:483-489*

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