Surgery Residency Core Curriculum Objectives

Department of Surgery School of Medicine

University of Puerto Rico

University of Puerto Rico
School of Medicine
GENERAL SURGERY RESIDENCY PROGRAM

Core Competencies

Residents will be regularly evaluated on the six core competencies. This will be measured through the evaluation processes as recommended by the Education and Evaluation Committee. The information will be reviewed and compiled as part of the semi-annual review by the Program Director. Achievement of satisfactory performance levels for all six competencies will be necessary for successful completion of the program.

Patient Care: Competency in **Patient Care** will be evaluated using a combination of direct observation of the resident, the clinical outcomes of the patients under the resident's care; the resident's patient presentation to faculty and/or senior residents; direct observation during bedside rounds; and direct observation during Morning Report presentations. Surgical skill is an important aspect of patient care, and this will be evaluated by the attending physician directly. Evaluations and reports from the responsible faculty members for each rotation will be reviewed and compiled. The 360 evaluation will give us information from the patient and other healthcare professionals regarding the resident's patient care. Residents are expected to develop as independent practitioners, and demonstrate responsibility, skill, and maturity in caring for the patients.

Medical Knowledge: Competency in **Medical Knowledge** will be evaluated using a combination of their annual ABS In-training examination scores, direct observation during patient care, and the results of direct questioning during clinical care and teaching experiences. The resident's knowledge base will be directly evaluated during their patient presentations to faculty and senior residents during routine clinical care as well as the well as during Morning Report presentations. Evaluation of competency in the cognate sciences (i.e. epidemiological and social-behavioral sciences) will be primarily evaluated during directed discussions in such forum as journal club, teaching and research conferences, or in patient-specific discussions as appropriate.

Practice-Based Learning and Improvement:

Competency in **Practice-Based Learning and Improvement** will be assessed by direct observation of improvement in the resident's clinical care as patient experience, knowledge and feedback grow, and through observation of improvements in surgical technique with repeated performance of procedures. In addition, the use of evidence-based medicine, evaluation of available evidence, and use of best-available evidence is stressed at the Morning Report meeting, M&M meetings, ACS update review and during routine clinical care, and the resident's performance in this area can be

evaluated in that setting. ACS core curriculum will be used to guide all learning activities.

System-Based Practice: Competency in **System-Based Practice** will be assessed by direct observation of the resident's use of the entire health care system in caring for their patients, as well as their teamwork within the system. This will be addressed using both the regular evaluations, as well as through direct observation during their rotations, Morning Report meeting and during discussions at clinical care conferences.

Professionalism: Competency in **Professionalism** will be assessed by direct observation of the resident's responsibility in carrying out their professional duties – including continuity of care, responsiveness to changes in clinical situations, overall responsiveness and availability. Also, maintaining ethical principles in their dealings with patients, their families, and other physicians or health-care workers. The resident's sensitivity to different patient populations will be evaluated by direct observation and comparison of the professionalism and responsibility demonstrated when caring for patients at different hospitals within the University of Puerto Rico School of Medicine and participating Institutions. 360 evaluation as well as e-value evaluations are used to measure this competency.

Interpersonal and Communication Skills: Competency in **Interpersonal and Communication Skills** will be assessed by direct observation of the resident during communications with other residents, with Surgery attending physicians, with physicians from other services, with non-physician clinical staff, with non-physician non-clinical staff, and with patients and their families. These competencies in communication with physicians and non-physicians are addressed by frequent evaluation form. Direct observation by the faculty of the interpersonal dealings between residents will be used. E-value, 360 evaluations and performance during journal club are used as well. The direct supervision of the medical record allows for the resident's evaluation of their ability to maintain a comprehensive, timely and legible document.

Overview

The evaluation forms are designed to help program director and faculty assess specific knowledge, skills, and attitudes of Surgery residents in the context of the newly defined ACGME general competencies : patient care, medical knowledge, practice-based-learning and improvement, interpersonal and communication skills, professionalism and system-based practice.

Standards and Ratings

When evaluating residents, program director and faculty should use the following definition as their standard – the level of knowledge, skills and attitudes that is expected from a clearly satisfactory resident at this stage of training. Using a nine-point scale, a

clearly satisfactory should receive a rating of “5”. A rating of “4” should be considered “marginal”.

The principal advantage of the nine-point scale over shorter scales are the additional levels of discrimination it provides. Thus, scales that include more rating tend to produce more reliable ratings.

Rating Description –

- 1-2 - Unsatisfactory
- 3 - Needs attention
- 4 - Marginal approaching expectations
- 5 - Expected level of performance
- 6 - Exceeds expectation
- 7-9 - Outstanding

University of Puerto Rico
School of Medicine
General Surgery Residency Program

Educational Goals and Objectives

General Surgery
General Surgery Curriculum for University District Hospital (PGY-5, PGY-4, PGY-3, PGY-2, PGY-1) and for Carolina UPR Hospital (PGY-4 and PGY-2)

Goals
Perform a thorough, accurate and appropriately directed history and physical examination on the surgical patient. Order in a cost-effective manner and accurately interpret lab and x-ray studies. Recognize what problems require surgical intervention, the procedure(s) required, timing, indications, and contraindications.

Residents will be able to appropriately prepare a patient preoperatively, provide appropriate intraoperative and postoperative care, and recognize and treat associated complications. At successful completion of the Surgical Residency, the Resident will be able to function safely and independently as a general surgeon.

Overall Objectives

1. Accurately diagnose, properly manage (including resuscitation and stabilization), and appropriately consult or refer those patients with surgical disease and emergencies such as:
    a. Trauma
    b. Acute appendicitis
    c. Shock
    d. Intestinal obstruction
    e. Burns - all degrees
    f. Pneumothorax
    g. Acute and chronic abdominal pain
    h. Peripheral vascular disease
    i. Biliary tract disease
    j. Inguinal, umbilical and femoral hernia
    k. Pancreatic disease.

2. Understand and master the principles of preoperative evaluation and care.
3. Understand and master the principles of postoperative evaluation and care, including:
    a. Wound healing
    b. Management of fluid, electrolytes, and nutrition
    c. Recognition and management of common complications.

4. Understand the various surgical treatment options and their potential risks in order to give proper education, advice, and emotional support to patients and their families.
5. Understand the role of the surgeon as consultant.
6. Understand the psychosocial issues confronting patients who have surgical disease.
7. Master as many of the bedside psychomotor skills listed below as possible:
    a. Basic surgical principles and skills
    b. Asepsis and proper handling of tissue in order to become a competent
    c. surgeon
    d. Peripheral IV line
    e. Peritoneal lavage
    f. Aspiration of breast mass/cyst
    g. Venous cutdown
    h. Insertion of arterial line
    i. Insertion of chest tube
    j. Central Venous Catheter (subclavian, jugular, femoral) insertion
    k. Pulmonary Artery Catheter placement and interpretation
    l. Insertion and use of NG feeding tubes
    m. Needle thoracentesis
    n. Incision and Drainage of abscesses
    o. Endoscopy
    p. Laceration repair and suturing.

PGY-1 Level

1. **Medical Knowledge**
    a. Demonstrate basic knowledge of anatomy and pathophysiology as it pertains to both general surgical and surgical subspecialty disease processes encountered during this year.
    b. Able to recognize and understand treatment of typical post-operative complications.
    c. Demonstrate an understanding of the post-operative fluid and electrolyte management of surgical patients.

Performance Measures

a. Weekly attending rounds and conferences
b. Daily work rounds and Resident evaluations
c. American Board of Surgery In-Training Examination
d. Preparation of at least one lecture during the academic year
e. End of rotation global evaluations

2. **Patient Care**
    a. Demonstrate mastery of focused physical examination and history taking skills of patients presenting with surgical illnesses.

b. Recognize a patient experiencing an acute clinical deterioration.
c. Assist in the performance of complex surgical procedures and understand the importance of the surgical assistant.

Performance Measures

a. Faculty Attending and Senior/Chief Resident global evaluations and focused review.

3. **Professionalism**

a. Demonstrate professional conduct on a daily basis with regard to punctuality, appropriate record keeping, and appropriate data gathering on daily rounds.
b. Maintain impeccable ethical standards in regards to veracity and willingness to admit to mistakes
c. Professionally and respectfully interact with ancillary staff, Physicians, and consultants
d. Seek additional responsibility for patient care when appropriate
e. Mentor Medical Students
f. To take primary responsibility for and demonstrate dedication to the care of the inpatients on the ward

Performance Measures

a. Faculty Attending and Senior/Chief Resident global evaluations
b. Attendance record at conferences
c. Evaluations from Nursing staff, Medical Students (360 degree evaluations)
d. Daily work rounds with Senior and Chief Residents and formal rounds and conferences with Faculty Attending

4. **Systems-Based Practice**

a. Demonstrate understanding of Hospital based systems
b. Support members of the Resident Team as needed in delivery of cost-effective health care and discharge planning
c. Demonstrate understanding of cost-effective care in the management of the routine post-operative patient

Performance Measures

a. Faculty and Senior/Chief Resident global evaluations at end of rotation

5. **Practice-Based Learning and Improvement**

a. Demonstrate use of medical literature in developing care plans for patients
b. Participate in mortality and morbidity conferences

Performance Measures

a. Contributions in conferences
b. Faculty Attending and Senior/Chief Resident global evaluations

6. **Interpersonal and Communication Skills**

a. Demonstrate compassion and empathy for patients
b. Communicate effectively with other members of the patient care team
c. Communicate effectively with the Faculty Attending in conferences, on rounds, in the clinic, and in the operating room
d. Communicate effectively with consultants
e. Demonstrate orderly and concise presentation of history and physical examination to Residents and Students

Performance Measures

a. Faculty and Senior/Chief Resident global evaluations at the end of rotations
b. Nursing and Medical Student evaluations (360 degree evaluations)

PGY-2 Level

1. **Medical Knowledge**

a. Focus on enhancing knowledge in the critical care and emergency room setting
b. Improve knowledge base to recognize and begin treatment of emergency general surgery conditions
c. Continue to expand knowledge base on general surgical conditions by completion of one general surgical text
d. Become familiar with resuscitation and critical care of burn patients
e. Prepare and present at least two academic lectures during the year.

Performance Measures

a. Weekly conferences and Faculty Attending rounds
b. Daily rounds and Resident evaluations
c. Successful completion of a burn rotation
d. Monthly academic quizzes on textbook reading
e. Performance on American Board of Surgery In-Training Examination

2. **Patient Care**

a. To function as the first line surgical evaluator for new surgical consults in the SICU, and on specialty rotations such as cardiovascular surgery and anesthesia.
b. To rapidly evaluate general surgery patient in the inpatient, ICU, and emergency room setting

c. To focus daily inpatient care on the ICU patient and the complex, multidisciplinary management of these patients.
d. To perform preoperative evaluation and routine postoperative care on routine outpatient general surgical patients in the clinic setting.
e. Provide appropriate informed consent to patients scheduled for surgery.
f. To obtain mastery of basic surgical technical skills, specifically knot tying, instrument handling and suturing in the context of open surgical procedures.
g. To obtain a basic skill set in technical aspects of laparoscopic surgery, specifically port placement, and instrument manipulation.
h. To become comfortable with performing basic laparoscopic procedures (cholecystectomy and appendectomy) under the direct supervision and with the assistance of the Faculty Attending Surgeon

Performance Measures

a. Global evaluation at end of rotation by Faculty Attending and Senior/Chief Resident/Surgical Critical Care Fellow
b. Daily evaluation by Senior/Chief Resident/Surgical Critical Care Fellow
c. Evaluation by SICU and ward Nursing staff
d. Daily SICU and general surgery work rounds

3. **Professionalism**

a. Function in an effective collaborative role with faculty and other residents
b. Attend all Program sponsored conferences unless excused in a punctual manner
c. To maintain ethical conduct at all times

Performance Measures

a. Faculty Attending and Senior/Chief Resident global evaluations
b. Attendance record at conferences
c. Evaluations from Nursing staff, Medical Students (360 degree evaluations)
d. Daily work rounds with Senior and Chief Residents and formal rounds and conferences with Faculty Attending

4. **Systems-based Practice**

1. Demonstrate understanding of cost effective diagnostic technology when making pre-operative evaluations
2. Demonstrate understanding of cost effective therapeutic interventions in the inpatient and outpatient settings

Performance Measures

a. Faculty and Senior/Chief Resident global evaluations at end of rotation

5. **Practice-based Learning and Improvement**

a. Understand and recognize personal areas where improvement in needed, both in technical areas and knowledge base, and to demonstrate a dedication to improvement in these areas
b. Participate in morbidity and mortality conferences
c. Initiate scholarly endeavor on one research project

Performance Measures

a. Weekly performance and attendance at conferences
b. Weekly performance on Attending rounds
c. Faculty Attending and Senior/Chief Resident global evaluations

6. **Interpersonal and Communication Skills**

a. Provide effective informed consent for surgical procedures
b. Mentor Medical Students and PGY-1s
c. Concisely and clearly present patients seen on call to Attending Faculty and Senior/Chief Residents
b. Concisely and clearly communicate patient information when interacting with consulting services
c. Facilitate the seamless delivery of health care as part of a multidisciplinary team
d. Demonstrate compassion and candor when interacting with family's of critically ill
e. patients

Performance Measures

a. Faculty and Senior/Chief Resident global evaluations at the end of rotations
b. Nursing and Medical Student evaluations (360 degree evaluations)

PGY-3 and PGY-4 Level

1. **Medical Knowledge**

a. Demonstrate on-going acquisition of basic knowledge base established in the first two years, by incorporating text book level knowledge with current journal articles
b. Routinely seek to expand knowledge base by performing frequent literature searches regarding care of patients encountered
c. Develop a depth of knowledge of the surgical subspecialties of pediatrics, cardiothoracic surgery, critical care, urologic surgery, neurologic surgery, plastic and reconstructive surgery, colorectal surgery, and head and neck surgery, that is expected of a general surgeon

Performance Measures

a. Weekly conferences and Faculty Attending rounds

b. Monthly academic quizzes on textbook reading
c. End of rotation global evaluations
d. Performance on American Board of Surgery In-Training Examination

2. **Patient Care**

a. Incorporate recent evidence in clinical journal articles into patient care plans
b. Begin to take a primary role in the management of complex surgical patients
c. Demonstrate maturity in knowing when and who to ask for assistance
b. Become comfortable in the evaluation, resuscitation and treatment of the trauma patient
c. Develop a basic understanding of the pre-operative evaluation and post operative care of the transplant patient
d. With the assistance of a Faculty Attending, and under a Faculty Attending's direct supervision, demonstrate the technical skill required to function as the primary surgeon in the performance of basic and complex open and laparoscopic general surgical procedures
e. Understand and function proficiently in the role of a general surgical consultant to patients on other services

Performance Measures

a. Global evaluation at end of rotation by Faculty Attending and Senior/Chief Resident/Surgical Critical Care Fellow
b. Daily evaluation by Senior/Chief Resident/Surgical Critical Care Fellow and Faculty in the Clinic and in the Operating Room
c. Nursing Evaluations at end of rotation

2. **Professionalism**

a. Display a degree of professional competence such that patients and ancillary staff begin to see the Resident as a leader in the health care team
b. Continue to display a degree of personal integrity such that the Resident's word is never questioned
c. Continue to mentor Junior Residents and Medical Students
d. Treat ancillary staff and Consulting Services with professionalism and respect
e. Always act in the best interest of the patient
f. Demonstrate complete preparation through reading and literature searches for conferences and for operative cases
g. Begin to function as a leader of the Resident health care team, both at night and in the absence of the Chief Resident

Performance Measures

a. Faculty Attending and Senior/Chief Resident global evaluations at end of rotation
b. Attendance record at conferences

c. Evaluations from Nursing staff, Medical Students (360 degree evaluations)
d. Daily work rounds with Senior and Chief Residents and formal rounds and conferences with Faculty Attending

4. **Systems-based Practice**

a. Become familiar with the system practices at various participating Hospitals and function effectively within these systems
b. Take elements of systems learned at other Institutions which appear effective and suggest improvements for our own system
c. Implement practices within the health care team which improve efficiency
d. Maintain Institutional standards regarding documentation of health care, dictations and coding

Performance Measures

a. Faculty and Senior/Chief Resident global evaluations at end of rotation
b. Compliance levels with dictation and documentation standards

5. **Practice-based Learning and Improvement**

a. Critically evaluate journal articles in the clinical setting and at academic conferences
b. Continue to participate in Morbidity and Mortality conferences
c. Continue to pursue research endeavors by seeing at least one project through to completion with manuscript submission

Performance Measures

a. Weekly performance and attendance at conferences
b. Weekly performance on Attending rounds
c. Faculty Attending and Senior/Chief Resident global evaluations

6. **Interpersonal and Communication Skills**

a. Continue to demonstrate appropriate skill in teaching Students, other Residents and other health care professionals
b. Provide effective pre- and post-operative teaching to patients and their families
c. Collaborate with patients and their families when planning operative procedures and postoperative care
d. Demonstrate effective documentation of health care through daily notes and written consultations
e. Prepare at least one lecture per year for the general surgery services and present them

Performance Measures

a. Faculty and Senior/Chief Resident global evaluations at the end of rotations
b. Nursing and Medical Student evaluations (360 degree evaluations)

PGY-5 Level

1. **Medical Knowledge**

a. Demonstrate a level of basic science and clinical knowledge to successfully pass the American Board of Surgery Qualifying Exam in General Surgery
b. Demonstrate a knowledge base adequate to sustain independent practice
c. Demonstrate the ability to utilize resources to obtain further information which will sustain independent practice

Performance Measures

a. Weekly conferences and Faculty Attending rounds
b. Monthly academic quizzes on textbook reading
c. End of rotation global evaluations by Faculty
d. Performance on American Board of Surgery In-Training Examination

2. **Patient Care**

a. Under direct Faculty supervision; function as the primary surgeon in complex surgical cases, with the assistance of either Faculty or another surgical resident
b. Under direct Faculty supervision, assist and direct Junior Residents in the performance of basic general surgical procedures
c. Demonstrate effective decision making in the management of care for all types of surgical patients and their families
d. Understand the initial management of pediatric surgical emergencies when no pediatric surgeon is available
e. Lead the surgical team in day to day care of all types of surgical inpatients
f. Anticipate, recognize and direct treatment of surgical complications

Performance Measures

a. Global evaluation at end of rotation by Faculty Attending
b. Daily evaluation by Faculty in the Clinic and in the Operating Room
c. Nursing, Junior Residents, and Medical Student (360 degree) Evaluations at end of rotation

3. **Professionalism**

a. Demonstrate a level of personal integrity that is beyond question
b. Function as a role model for Junior Residents and Medical Students

c. Treat patients, Junior Residents, Consulting Physicians and ancillary staff with respect, and as essential and integral members of the health care team
d. At all times place the interests of the patient first
e. Demonstrate respect for the role of the Faculty Attending as ultimately responsible
f. for every aspect of a patient's care

Performance Measures

a. Faculty Attending global evaluations at end of rotation
b. Attendance record at conferences
c. Evaluations from Nursing staff, Junior Residents, and Medical Students (360 degree evaluations)
d. Formal rounds and conferences with Faculty Attendings

4. **Systems-based Practice**

a. Demonstrate an understanding of the administrative tasks necessary to have an efficiently run clinic
b. Oversee the discharge planning and continuity of care of all surgical inpatients on an assigned Resident team
c. Support the ACGME regulations for duty hours; function as a manager to notify the Program Director of situations leading to impending work hour violations for Residents on their team
d. Assist in making Resident call schedules and Operating Room schedules
e. Identify system weaknesses and make constructive suggestions for improvement
f. Meet administrative requirements set forth by the Program and the Hospital(s)

Performance Measures

a. Faculty global evaluations at end of rotation
b. Evaluations from Nursing staff, Junior Residents, Medical Students (360 degree evaluations)

5. **Practice-based Learning and Improvement**

1. Demonstrate self awareness in personal limitations prior to starting an independent
2. practice
3. Demonstrate on-going use of available literature and resources to improve patient
4. care
5. Actively participate in and contribute to weekly Morbidity and Mortality Conferences
6. Demonstrate commitment to lifelong learning

Performance Measures

a. Weekly performance and attendance at conferences
b. Weekly performance on Attending rounds
c. Faculty Attending global evaluations
d. Evaluations from Nursing staff, Junior Residents, Medical Students (360 degree
e. evaluations)

6. **Interpersonal and Communication Skills**

a. Function in conferences as a Junior Attending, leading discussions and teaching
b. Junior Residents and Medical Students
c. Demonstrate effectiveness in the education of Junior Residents and Medical Students on daily rounds
a. Demonstrate the ability to effectively evaluate the skills of Junior Residents and
b. Medical Students and provide timely feedback
c. Interact with Surgical Faculty as a Junior Colleague
d. Demonstrate ability to deliver “bad news” to a family as compassionately and clearly as possible

Performance Measures
e. Faculty global evaluations at the end of rotations
f. Nursing, Junior Resident, and Medical Student evaluations (360 degree evaluations)

Required Readings:
The following texts will be issued by the Program for loan during a Resident’s training:
 Cameron, J.L., 2008: *Current Surgical Therapy, 9th Edition* (Mosby, Inc.).
 O’Leary, J.P., 2008: *The Physiologic Basis of Surgery, 4th Edition* (Williams & Wilkins)
 American College of Surgeons, 2006 ACS Surgery: Principles and Practice (continually updated, online access).

Endocrine Surgery Curriculum for General Surgery Residents

Introduction

The following is a curriculum developed by the American Association of Endocrine Surgeons Education Committee outlining the knowledge and skill objectives that should be taught, learned, and demonstrated by the completion of general surgery residency. Although the field of endocrine surgery encompasses many uncommon diseases and syndromes, the curriculum is based on common endocrine diseases where the practicing general surgeon is often involved in the care. Other, uncommon syndromes outlined are appropriate for review because of their underlying pathophysiology and presence on standardized examinations. A resident successfully demonstrating all of these objectives will have the appropriate background to perform common endocrine surgical procedures commensurate with his/her skill and expertise.

Thyroid Disease

Goals:

Outline the knowledge and skill objectives in thyroid disease that should be taught, learned, demonstrated, and evaluated by the completion of general surgery residency.

PGY1

Knowledge Objectives

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

1. Demonstrate normal thyroid anatomy in a cadaver or in the operating room, including the thyroid gland, its vascular supply and venous drainage, the parathyroid glands, recurrent laryngeal nerves, strap muscles, and platysma.

2. Describe normal variants in recurrent laryngeal nerve anatomy including frequency.

3. Describe normal thyroid embryogenesis and descent.

4. Outline the normal thyroid hormone synthetic pathway including iodine metabolism and feedback mechanisms.
5. Describe the impact of specific medications on the thyroid hormone synthetic pathway and thyroid function.

6. Describe the impact of aging on the thyroid hormone synthetic pathway and thyroid function.

7. Outline appropriate thyroid function testing for the following clinical scenarios, including interpretation of predicted test results:

    - Thyroid nodule

- Goiter
- Hyperthyroidism
- Hypothyroidism

8. Develop an algorithm that includes pertinent history, examination findings, and diagnostic evaluation of:
- A palpable thyroid nodule
- A nonpalpable nodule discovered on ultrasound performed for nonthyroid pathology

9. Describe the recognition, evaluation, and management of the following early postoperative complications:
- Hematoma
- Hypocalcemia

10. Describe the outpatient management of the following postoperative conditions
- Thyroid hormone replacement, postoperative
- Postoperative hypocalcemia
- Postoperative voice changes

Skill objectives
By the completion of the first year, the general surgery resident should be able to:
1. Obtain a focused history, perform an examination, and institute the diagnostic evaluation of a patient with the following conditions:
- Thyroid nodule
- Goiter
- Hyperthyroidism

2. Palpate and describe a thyroid nodule

3. Palpate and describe a goiter

4. Identify exophthalmos

PGY 2&3

Knowledge Objectives
In addition to the previous objectives, by the completion of the third clinical year, the general surgery resident should be able to:

1. Outline algorithms for the evaluation and treatment of:
- Well-differentiated thyroid cancer
- Medullary thyroid cancer
- Thyroid lymphoma
- Anaplastic thyroid cancer

2. Describe risk factors for well-differentiated thyroid cancer, medullary thyroid cancer, and anaplastic thyroid cancer.

3. Outline algorithms for the evaluation and treatment of hyperthyroidism due to Graves' disease, toxic nodule, medications, pregnancy.

4. Describe the clinical presentation of thyroid storm and outline the treatment of thyroid storm.

5. Outline an algorithm for the evaluation and management of nontoxic multinodular goiter, including substernal goiter with and without airway involvement.

6. Outline the pathophysiology of:
- Multinodular goiter
- Grave's disease
- Thyroid cancer

7.Describe operative approaches to thyroid pathology

8. Outline the staging and prognosis in thyroid cancer

9. Recognition and treatment of common postoperative complications
- Hematoma
- Hypocalcemia
- Thyroid storm
- Voice changes

Skill objectives

In addition to the previous objectives, by the completion of the third clinical year, the general surgery resident should be able to:
1. Demonstrate normal anatomy in the operating room

2. Palpate and describe a thyroid nodule

3. Perform a fine needle aspiration biopsy of a palpable thyroid nodule

4. Perform the initial steps in thyroid surgery, including
- Patient positioning and marking
- Skin incision and raising subplatysmal flaps
- Opening strap muscles
- Close strap muscles, platysma, and skin

PGY 4&5

Knowledge objectives

In addition to the previous objectives, by the completion of the final clinical year, the general surgery resident should be able to:
1. Outline the complete evaluation and management of patients with thyroid cancer (papillary, follicular, medullary, anaplastic) including:

- Preoperative evaluation including radiographic studies
- Operative approaches including discussion of
- lobectomy vs. total thyroidectomy
- Indications for and extent of neck dissection
- Incidental finding of cancer in resected specimen
- Metastatic thyroid cancer
- Large remnant in patient with thyroid cancer
- Tracheal invasion
- Esophageal invasion
- Postoperative treatment, surveillance, and monitoring

2.Outline the complete evaluation and management of nontoxic multinodular goiter and substernal goiter

3. Describe approaches for reoperative thyroid surgery

4. Describe the management of intraoperative recurrent nerve injury

Skill Objectives
In addition to the previous objectives, by the completion of the final clinical year, the general surgery resident should be able to:

1. Interpret thyroid ultrasound images.

2. Perform and interpret head and neck ultrasonography Identify which ultrasound equipment/probes are best used for head and neck ultrasonography.

- Identify normal structures visualized during ultrasound of the head and neck (Thyroid, parathyroid, lymph nodes, trachea, carotid artery, internal jugular vein, inferior and superior thyroid vessels, parotids, submandibular glands) Describe the echogenicity of a visualized structure as hypoechoic, isoechoic, anechoic or hyperechoic relative to the normal thyroid gland
- Use ultrasound to identify thyroid nodules, parathyroid adenomas and adenopathy
- Describe which features of a thyroid nodule on ultrasound are more worrisome for malignancy

3. If possible perform an ultrasound guided fine needle aspiration biopsy of a thyroid nodule

4. Assess vocal cord function either by flexible transnasal endoscopy or indirect laryngoscopy.

Parathyroid Disease

Goals:
Outline the knowledge and skill objectives in parathyroid disease that should be taught, learned, demonstrated, and evaluated by the completion of general surgery residency.

PGY1

Knowledge Objectives

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

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

2. Describe normal parathyroid embryogenesis and descent. Describe how this affects ectopic gland location

3. Outline the normal calcium metabolic pathway including vitamin D metabolism, parathyroid hormone production and regulation, and calcitonin production and regulation.

4. Describe the impact of specific medications and medical conditions on serum calcium and calcium metabolism.

5. Describe the impact of aging on calcium metabolism.

6. Outline the evaluation and treatment of life-threatening hypercalcemia.

7. Outline the appropriate evaluation for the following clinical scenarios, including interpretation of expected test results:
- Primary hyperparathyroidism
- Secondary hyperparathyroidism
- Tertiary hyperparathyroidism
- Hypercalcemia associated with malignancy
- Hypercalcemia associated with medications

8. Develop an algorithm that includes pertinent history, examination findings, and initial diagnostic evaluation of:
- Asymptomatic primary hyperparathyroidism
- Symptomatic primary hyperparathyroidism

9. Describe the recognition, evaluation, and management of the following postoperative complications:
   - Hematoma
   - Hypocalcemia
   - Voice changes

Skill objectives
By the completion of the first year, the general surgery resident should be able to:

1. Obtain a focused history, perform an examination, and institute the diagnostic evaluation of a patient with hypercalcemia

PGY 2&3

Knowledge Objectives

In addition to the previous objectives, by the completion of the third clinical year, the general surgery resident should be able to:

1. Demonstrate in a cadaver or the operating room typical locations for ectopic parathyroid glands.

2. Be familiar with current Consensus guidelines for surgical treatment of asymptomatic patients. Discuss the initial evaluation of patients with asymptomatic hyperparathyroidism being considered for observation. This should include an outline of the appropriate follow up of these patients including diagnostic evaluation, frequency of testing, and anticipated outcomes. Describe which patients are appropriate candidates for nonoperative management of hyperparathyroidism.

3. Outline indications for and interpretation of results of bone density testing.

4. Outline outpatient follow up after parathyroidectomy.

5. Outline an algorithm for the preoperative localization of parathyroid adenoma in patients with primary hyperparathyroidism. Discuss the rationale and accuracy of the various localizing strategies and tests.

6. Outline an algorithm for intraoperative confirmation of successful parathyroidectomy during full neck exploration and minimally invasive parathyroidectomy.
   - Describe differences between a bilateral 4-gland exploration, a unilateral exploration and a focused exploration
7. Outline the prevention, recognition, and management of hungry bone syndrome after parathyroidectomy.

8. Outline a diagnostic and treatment pathway for patients with non-MEN familial hyperparathyroidism

9. Describe the technique of cryopreservation and its role in the treatment of patients with multigland disease
10. or during reoperative parathyroid surgery.

11. Outline the interpretation of intraoperative PTH monitoring results and their correlation with postoperative eucalcemia

Skill objectives

In addition to the previous objectives, by the completion of the third clinical year, the general surgery resident should be able to:

1. Demonstrate normal parathyroid anatomy in the operating room at the time of parathyroidectomy or thyroidectomy.

2. Interpret a sestamibi scan.

3. Perform the following steps of parathyroidectomy (Be able to describe difference in performing a full neck exploration, minimally invasive approach, unilateral or focused)
   - Patient positioning and marking
   - Skin incision and raising subplatysmal flaps
   - Opening strap muscles
   - Close strap muscles, platysma, and skin

PGY 4&5

Knowledge objectives

In addition to the previous objectives, by the completion of the final clinical year, the general surgery resident should be able to:

1. Outline the complete evaluation and management of patients with parathyroid cancer including:
   - Preoperative evaluation including radiographic studies
   - Operative approaches
   - Extent of resection
   - Postoperative treatment, surveillance, and monitoring

2. Describe in detail the different techniques of focused parathyroidectomy including:
   - Mini incision open
   - Radioguided
   - Video-assisted and endoscopic approaches

3. Outline the complete evaluation and management of recurrent or persistent hyperparathyroidism, including imaging studies and selective venous sampling.

4. Describe regional anesthesia for minimally invasive parathyroidectomy

5. Describe the treatment pathway for MEN 1 and 2A patients, including the order in which the different manifestations should be treated

Skill Objectives

In addition to the previous objectives, by the completion of the final clinical year, the general surgery resident should be able to:

1. Perform a parathyroidectomy (preferably both full neck exploration and minimally invasive), including
   - Intraoperative identification and resection of adenoma
   - Intraoperative identification of normal parathyroid glands
   - Intraoperative identification of hyperplasia
2. Reimplant a parathyroid gland
3. Participate in or perform re-exploration forpersistent or recurrent hyperparathyroidism.
4. Assess vocal cord function either by flexible transnasal endoscopy or indirect laryngoscopy.
5. Interpret a neck ultrasound, demonstrating the thyroid gland, adjacent structures and a parathyroid adenoma or hyperplasia.
   - Identify which ultrasound equipment/probes are best used for head and neck ultrasonography
   - Identify typical locations where an abnormal parathyroid may be visualized during ultrasound of the head and neck
   - Use ultrasound to identify parathyroid adenomas, hyperplastic parathyroids and learn about the ultrasound features that help differentiate them from thyroid nodules and adenopathy.
   - Participate in or learn the protocol and value of performing a fine needle aspiration of a parathyroid with measurement of PTH levels on the needle washout.

Adrenal Disease

Goals:

Outline the knowledge and skill objectives in adrenal disease that should be taught, learned, demonstrated, and evaluated by the completion of the general surgery residency.

PGY 1

Knowledge Objectives

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

1. Describe the embryology, histology, and physiology of the adrenal gland, distinguishing differences in the cortex and medulla.

2. Describe the anatomy of the adrenal gland, including the arterial supply, venous drainage and relationship to adjacent structures.

3. Outline the biosynthesis and physiologic effects of glucocorticoids, mineralocorticoids, and adrenal sex steroids.

4. Outline the catecholamine synthetic pathway.

5. Identify the etiologies, common signs and symptoms, and clinical presentations of Cushing's syndrome.

6. Outline the diagnostic evaluation of hypercortisolism.

7. Describe the protocol for perioperative steroid use in a patient taking exogenous steroids.

8. Outline the etiologies, clinical presentation, evaluation and management of adrenal insufficiency.

9. Identify complications of adrenalectomy, including adrenal insufficiency and the diagnosis, treatment, and causes.

10. Describe the signs, symptoms, and evaluation of primary hyperaldosteronism.

11. Differentiate between primary and secondary hyperaldosteronism.

12. Describe the general attributes of adrenocortical carcinoma.

13. Describe the physiology, clinical presentation, treatment, and preoperative preparation of pheochromocytoma.

14. Perform a thorough physical examination and be familiar with signs of hormone excess. (hirsuitism, striae, acne, facial changes, clitoral hypertrophy, etc)

Skill objectives

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

1. Identify both adrenal glands in a cadaver or in the operating room.
2. Locate the adrenal glands on a CT scan

PGY 2 & 3

Knowledge Objectives

In addition to the previous objectives, by the completion of the third clinical year, the general surgery resident should be able to:

1. Outline the diagnostic pathway of ACTH dependent vs. ACTH independent Cushing's syndrome, including the role of the low and high dose dexamethasone suppression test. Understand normal ranges and those expected for suppression of cortisol and be familiar with the utility and role of salivary, venous and urinary cortisol assessments.
2. Describe the localization studies available for adrenal tumors, including CT scanning, MIBG, PET scanning, and MRI.
3. Distinguish bilateral hyperplasia vs. unilateral disease in Cushing's syndrome and primary hyperaldosteronism.
4. Describe the diagnostic algorithm for primary hyperaldosteronism.
5. Describe the treatment and outcome for primary hyperaldosteronism in patients treated with adenoma vs. bilateral adrenal hyperplasia.
6. Outline the diagnostic evaluation and treatment of adrenocortical carcinoma.
7. Outline the diagnostic pathway for pheochromocytoma and review of the treatment modalities and recommendations.
8. Describe the evaluation and treatment of an adrenal incidentaloma.
9. Explain the etiology, diagnosis, and treatment of adrenal cystic disease.
10. Explain the role of fine needle aspiration biopsy in the evaluation of adrenal tumors.
11. Describe operative approaches for adrenal surgery, including the laparoscopic trans- and extraperitoneal approaches and anterior, lateral and posterior open approaches.
12. Understand functioning imaging modalities for pheochromocytoma and adrenal hyperplasia
13. (i.e., MIBG or NP 59 scanning)
14. Understand technique involved with adrenal vein sampling; role of ACTH stimulation and cortisol assessment
15. to document accuracy of catheter location.
16. Understand algorithm and dosing of preoperative preparation/blockade for pheochromocytoma
17. Be familiar with medications that can alter interpretation of catecholamines (i.e. antidepressants, Tylenol, etc)

Skill objectives

In addition to the previous objectives, by the completion of the third clinical year, the general surgery resident should be able to:
1. Identify adrenal anatomy, blood supply, and surrounding structures at the time of adrenalectomy or other operation.
2. Demonstrate operative exposure (open or laparoscopic; human, cadaver, or animal) of either adrenal gland.

PGY 4 & 5

Knowledge Objectives

In addition to the previous objectives, by the completion of the final clinical year, the general surgery resident should be able to:

1. Describe congenital adrenal hyperplasia.

2. Describe the surgical approaches to pheochromocytoma.

3. Review all the surgical options/approaches for adrenalectomy and the indications for each.

4. Describe the intraoperative management of patients with pheochromocytoma during surgery regarding anesthetic management, surgical technique, and pre and postoperative care.

5. Identify the distinguishing characteristics of extraadrenal pheochromocytomas.

6. Describe the evaluation and treatment of multiple endocrine neoplasia type 2 syndrome in a patient with adrenal lesions.

7. Describe the treatment options for a patient with malignant pheochromocytoma.

8. Identify the steps for a safe and successful right and left laparoscopic transabdominal adrenalectomy. Be familiar with operative technique (positioning, steps of the operation)

9. Describe the diagnosis and treatment of paragangliomas.

10. Be familiar with common complications following adrenalectomy and ways to avoid them.

11. Be comfortable with maintenance or physiologic dosing of steroids and florinef following bilateral adrenalectomy. Be comfortable with conversion of steroid supplementation. (ex: Dexamethasone, Solumedrol, hydrocortisone)

12. Understand indications and technique of subtotal adrenalectomy

13. Have an understanding of intraoperative medical management of adrenergic crisis.

Skill Objectives

In addition to the previous objectives, by the completion of the final clinical year, the general surgery resident should be able to:
Perform an adrenalectomy (open or laparoscopic), including patient positioning, dissection, resection, and postoperative care.

Gastrointestinal Neuroendocrine Tumors
Gastrointestinal neuroendocrine tumors are rare entities. Therefore, the focus of this section is on gastrointestinal hormone pathophysiology and recognition of syndromes

associated with tumors producing these hormones. Because of the rarity of these tumors and syndromes, only knowledge objectives are incorporated in this section of the curriculum.

Goals:
Outline the knowledge objectives in neuroendocrine tumors that should be taught, learned, demonstrated, and evaluated by the completion of general surgery residency.

PGY1 – 3

Knowledge Objectives
By the completion of the third year, the general surgery resident should be able to:

1. Describe the site of synthesis, mechanism of action, and normal physiologic effects of the following gastrointestinal hormones
   - Gastrin
   - Insulin
   - Glucagon
   - Vasoactive Intestinal Peptide
   - Somatostatin
2. Describe the different cell types of the endocrine pancreas, their synthetic products, stimuli and inhibitors

to these products, and distribution in the pancreas.

3. Describe the symptoms and syndromes associated with the hypersecretion of the following gastrointestinal hormones:
   - Gastrin
   - Insulin
   - Glucagon
   - Vasoactive Intestinal Peptide
   - Somatostatin

4. Describe the typical presentation of carcinoid tumors.

5. Describe the sites of occurrence of carcinoid tumors including their frequency and propensity for developing carcinoid syndrome.

6. Describe the pathophysiology of carcinoid syndrome.

PGY 4&5

Knowledge objectives

In addition to the previous objectives, by the completion of the final clinical year, the general surgery resident should be able to:

1. Describe the diagnostic approach including biochemical evaluation, ancillary studies, and recommended
localization methods for the following tumors:

- Gastrinoma
- Insulinoma
- Glucagonoma
- VIPoma
- Somatostatinomas
- Nonfunctional neuroendocrine tumors

2. Describe the indications for surgery, operative approaches, and expected outcomes for the following tumors:

- Gastrinoma
- Insulinoma
- Glucagonoma
- VIPoma
- Somatostatinomas
- Nonfunctional neuroendocrine tumors

3. Understand how to diagnose and treat the syndrome of post gastric bypass hypoglycemia

4. Outline an algorithm for surgical management of carcinoid tumors based on site, size, and presence of carcinoid syndrome.

5. Outline the follow up of patients who have undergone resection of carcinoid tumors.

6. Outline the management of liver metastases of the neuroendocrine tumors.

Familial Endocrinopathies

Familial endocrinopathies are rare entities; however they have important screening and treatment implications. Because of their rarity only knowledge objectives are incorporated in this section of the curriculum.

Goals:

Outline the knowledge objectives in familial endocrinopathies that should be taught, learned, demonstrated, and evaluated by the completion of general surgery residency.

Multiple Endocrine Neoplasia Syndromes

Knowledge Objectives

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

1. Describe the components of each of the following multiple endocrine neoplasia (MEN) syndromes, their mode of inheritance, and the frequency of expression of each component:

- MEN type 1
- MEN type 2A
- MEN type 2B

2. Outline the diagnostic approach for each of the MEN syndromes.

3. Describe the treatment, including timing of operative approach, for each component of the following syndromes:
   - MEN type 1
   - MEN type 2A
   - MEN type 2B
4. Outline recommended genetic testing for patientsm suspected of having one of the MEN syndromes.
5. Outline the recommended screening for kindred of patients with the different MEN syndromes.
6. Outline the recommended follow up of patients with the different MEN syndromes.
7. Describe the prognosis for each of the MEN syndromes.

Familial Medullary Thyroid Cancer
Knowledge Objectives
By the completion of the final clinical year, the general surgery resident should be able to:

1. Describe the mode of inheritance of familial medullary thyroid cancer (FMTC).
2. Outline the diagnostic evaluation, including genetic testing, of FMTC.
3. Outline the recommended treatment, including the role of prophylactic thyroidectomy, for FMTC.
4. Outline the recommended screening for kindred of patients with the different MEN syndromes.
5. Outline the recommended follow up of patients with FMTC.
6. Describe the prognosis for FMTC.
7. Compare and contrast the evaluation and management of FMTC with sporadic medullary thyroid cancer.

Familial Papillary Thyroid Cancer

Knowledge Objectives
By the completion of the final clinical year, the general surgery resident should be able to:

1. Describe the diagnostic criteria for familial papillary thyroid cancer (FPTC).
2. Describe the mode of inheritance of FPTC.
3. Outline recommended screening for FPTC.
4. Outline the recommended treatment of FPTC.
5. Outline the recommended follow up of patients with FPTC.
6. Describe the prognosis for FPTC.
7. Compare and contrast the evaluation and management of FPTC with sporadic papillary thyroid cancer.

Familial non-MEN Hyperparathyroidism

Knowledge Objectives

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

1. Describe the diagnostic criteria for familial non – MEN hyperparathyroidism (FHPTH).
2. Describe the mode of inheritance of FHPTH.
3. Outline recommended screening for FHPTH.
4. Compare and contrast the evaluation and management of FHPTH with sporadic primary hyperparathyroidism.

Vascular Surgery Competency Based Curriculum

MEDICAL/SURGICAL KNOWLEDGE

Medical knowledge is gained over a continuum of increasing understanding that occurs at an individual rate. The resident will gain progressive knowledge of diagnosis, management, treatment options (surgical and non-surgical), long term prognosis, post operative results, complications, patient risk and cost considerations associated with:

Cerebrovascular disease

1. symptomatic and asymptomatic carotid disease
2. vertebrobasilar disease
3. carotid body tumors

Upper extremity occlusive disease

1. thoracic outlet syndrome
2. vasospastic disease

Aneurysm disease

1. dissection versus rupture
2. thoracoabdominal and suprarenal aneurysms
3. ruptured versus elective aneurysm AAA repairs
4. management of small abdominal aortic aneurysms
5. inflammatory aneurysms
6. infected grafts and mycotic aneurysms
7. splanchnic aneurysms
8. iliac, femoral and popliteal aneurysms
9. Aortoiliac occlusive disease
10. transluminal angioplasty
11. reconstructive procedures
12. extra anatomic reconstruction indications and techniques, ie: ax-fem, fem-fem
13. interventional radiographic approaches

Lower extremity occlusive disease, chronic

1. medical management
2. autogenous venous bypass i. above knee, below knee
    a. ii. in-situ, reversed

3. artificial material bypass
4. transluminal angioplasty
5. popliteal entrapment syndrome

Lower extremity occlusive disease, acute

1. embolic occlusion
2. thrombosis
3. hypercoagulable states
4. fibrinolytic therapy
5. balloon catheter embolectomy

Vascular trauma

1. penetrating injuries i. aorta and arch vessels
    a. extremity vessels

2. blunt traumai. associated with fractures of extremities
    a. thoracic aorta
    b. compartment syndrome

Mesenteric vascular disease

1. renovascular
2. chronic splanchnic occlusive disease
3. acute splanchnic occlusive disease

Angioaccess

1. methods of access
2. techniques of arterio-venous shunts/fistula
3. various devices used for angioaccess

Venous disease

1. varicose veins
2. management of deep venous thrombosis
3. venous thrombectomy
4. post phlebitic syndrome
5. venous stasis change and ulceration
6. effort thrombosis
7. medical and surgical treatment of acute PE
8. IVC filter use

TECHNICAL SKILLS / PATIENT CARE

Residents will develop and refine skills necessary to:

Senior Resident (PGY 4)

1. Mastery of all junior resident skills.
2. Assist and perform major surgical procedures, based on the residents' level of skill demonstrated.
3. Oversee work of the junior resident on service.

INTERPERSONAL AND COMMUNICATION SKILLS

Senior Residents (PGY 4) are expected to be effective in both interpersonal and communication skills including:

1. Establish rapport with patients and their families.
2. Perform a patient-centered medical interview, focusing on vascular issues.
3. Engage patients in shared decision-making, and participate in family discussions.
4. Effectively and considerately communicate with team staff in a manner that promotes care coordination.
5. Discuss patient’s fears regarding loss of life or limb.
6. Discuss patient’s fear of amputation and it’s impact on self-image and mobility.

PROFESSIONALISM

All residents **(PGY 4)** are expected to conduct themselves in a compassionate, ethical and professional manner, including:

1. Demonstrate respect and compassion for all patients.
2. Exhibit competency in working with patients regarding advanced directives, DNR status, futility, and withholding/withdrawing therapy.
3. Understand and compassionately respond to issues of culture, age, sex, sexual orientation, and disability for all patients and their families.
4. Identify patient's fear associated with the diagnosis of stroke.
5. Identify and assist with the psychological stress of patients with chronic vascular disease as it affects their personal life, their family life, and their socioeconomic environment.

PRACTICE BASED LEARNING AND IMPROVEMENT

All residents (**PGY 4)** are expected to

1. Exhibit self-directed learning.
2. Demonstrate improvement in clinical management of patients by continually improving vascular-related knowledge and skills during the rotation.

SYSTEMS BASED PRACTICE

All residents (**PGY 4)** are expected to

1. Demonstrate understanding of medical delivery systems as they relate to both inpatient and outpatient resources.
2. Work well with multidisciplinary teams, coordinating care and effectively working with vascular surgeons and other providers in a team setting.
3. Arrange for postoperative care and follow-up for amputees.

General Surgery Competency Based Curriculum

(This applies to both the Blue and Red General Surgery Services at Veterans Administration Medical Center – PGY-1, 2 and 5)

MEDICAL/SURGICAL KNOWLEDGE:
Resident will gain knowledge of diagnosis, management, treatment, treatment options (surgical/non-surgical), long term prognosis, post-operative effects, complications, patient risk and cost considerations of various conditions.

Knowledge expectations are on a continuum from the first through the fifth year.

1. Body as a whole (core of basic surgical knowledge)
   - Wound healing
   - Hemostasis and bleeding diathesis
   - Tumor kinetics (biology of tumor growth, therapeutic regimens to include chemotherapy, radiotherapy, immunotherapy, surgery).
   - Surgical infections and their management with use of antibiotics, ancillary modes and surgical intervention.
   - GI physiology - as it relates to surgical diseases.
   - GU physiology - assessment of renal function and renal physiology.
   - Surgical endocrinology - as it applies to the response to stress and injury, and the management of endocrinopathy as it involves surgical patients.
   - Surgical nutrition
   - Applied surgical anatomy - familiarity with regional anatomy including thoraco-abdominal, head and neck, pelvis and extremities.

2. Diseases of the alimentary tract

3. Diseases of the abdomen

4. Diseases of the breast

5. Diseases of the head and neck

6. Diseases of the vascular system

7. Diseases of the endocrine system

PATIENT CARE AND TECHNICAL SKILLS:

PGY 1: Can expect to learn the listed skills and assume responsibility for managing patients with these problems under close supervision of resident and attending staff.

- Refinement of history and physical skills.
- Resuscitative maneuvers (IV placement, chest tubes, central line placement, endotracheal intubation and control of hemorrhage, and interpretation of emergent CT).
- Pre and post-operative care
- Basic use of surgical instruments

The following operative procedures:

- Minor outpatient surgical procedures
- Inguinal herniorrhaphy
- Breast biopsy
- Appendectomy

PGY 2: Will assume greater responsibility and technical skills involved in:

- Initial evaluation of surgical problems.
- Consultation on emergency and in-hospital patients.
- Teaching students and interns.
- Management decisions

The following procedures:

- Cholecystectomy
- Exploratory laparotomies
- Small bowel anastomosis
- Sentinal node biopsy, mastectomy

PGY 5: Will assume greater responsibility and advanced technical skills with regard to:

- Teaching of medical students and junior residents.
- Organization of conferences
- Daily patient management decisions
- Direct resuscitative efforts in trauma and critically ill surgical patients.

The following procedures:

- Common duct exploration
- Thyroid surgery, parathyroid, and adrenal surgery (endocrine).
- Mstectomies
- Colon surgery
- Flexible endoscopy (EGD, colonoscopy, choledochoscopy).

PGY 5 will assume primary responsibility for complex technical skills required for the management of:

- Complex surgical problems involving all areas of the body.
- Daily patient care
- Clinic, least one half day per week for a minimum of one year.
- Admit patients from this clinic and provide in-hospital management.
- Follow patients' surgical problems and post-operative patients in this clinic.
- Organization of teaching conferences and rounds.
- Assigning resident staff work-ups and operative responsibilities.

The following procedures to include:

- Esophageal and gastric procedures
- Pancreatic operations
- Peripheral-vascular operations
- Radical head and neck operations
- Major liver resection
- Major cancer procedures

INTERPERSONAL AND COMMUNICATION SKILLS

PGY-1 and 2 residents will develop and refine their individual style when communicating with patients.

- They will strive to create ethically sounds relationships with patients, the physician team and supporting hospital personnel. They will create effective written communications through accurate, complete, and legible notes.

- They will exhibit listening skills appropriate to patient-centered interviewing and

- communication. Residents will recognize verbal and nonverbal cues from patients.
- Residents will be able to communicate with patients concerning end-of-life decisions.

PGY-5 residents will also exhibit team leadership skills through effective communication as manager of a team.

- PGY-4 and 5 residents are expected to assist junior peers, medical students, and other hospital personnel to form professional relationships with support staff. Residents will respond to feedback in an appropriate manner and make necessary behavioral changes. Residents should additionally be able to successfully negotiate nearly all “difficult” patient encounters with minimal direction.

- PGY- 5 residents should function as team leaders with decreasing reliance upon attending physicians.

PROFESSIONALISM

- All residents will demonstrate integrity, accountability, respect, compassion, patient advocacy, and dedication to patient care that supercedes self-interest. Residents will demonstrate a commitment to excellence and continuous professional development. They will be punctual and prepared for teaching sessions.
- Residents will demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentially of patient information, and informed consent.
- Residents are expected to show sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

PRACTICE BASED LEARNING AND IMPROVEMENT

PGY-1 and 2 residents will use hospital and University library resources to critically appraise medical literature and apply evidence to patient care.

- They will use hand-held computers, desktop PC's and Internet electronic references to support patient care and self-education.
- They will model these behaviors to assist medical students in their own acquisition of knowledge through technology.

PGY-5 residents will in addition consistently seek out and analyze data on practice experience, identify areas for improvement in knowledge or patient care performance and make appropriate adjustments.

- They will regularly demonstrate knowledge of the impact of study design on validity or applicability to individual practice.
- PGY-5 residents will additionally model independent learning and development and assist with the learning and development of the junior residents.

SYSTEMS BASED PRACTICE

PGY-1 residents will be sensitive to health care costs while striving to provide quality care. They will begin to effectively coordinate care with other health care professionals as required for patient needs.

PGY-2 residents, in addition to the above, will consistently understand and adopt available clinical practice guidelines and recognize the limitations of these guidelines. They will work with patient care managers, discharge coordinators and social workers to coordinate and improve patient care and outcomes.

PGY 5 residents, in addition, will enlist social and other out-of-hospital resources to assist patients with therapeutic plans. PGY-4 and 5 residents are also expected to model cost-effective therapy.

Colon and Rectal Service Curriculum (A-PGY5 B- PGY-3)

Description of Rotation on Educational Experience:

The Colon and Rectal Service Rotation is intended to provide general surgery residents of third and fourth year a comprehensive experience in the colon and rectal service field, during a six weeks course rotation. The colon and rectal service experience will be provided at several locations, eg: university clinics / Medical Center practice; Affiliated Hospitals and attendings private practice clinics.

I. 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 are expected to:

1. Demonstrate knowledge and skills in physical examination in abdominal and anorectal conditions.
2. Formulate treatment plan to include additional testing resuscitation and operative intervention.
3. Recognition of acute abdomen and anorectal emergencies.
4. Describe principles of fluid and nutritional therapy:
    a. Pre and post op maintenance fluid requirements
    b. Description of composition of electrolyte concentration of body fluids
    c. Nutrition requirements: enteral vs. parenteral support
5. Consultation of specialty services and when to call attending physicians.
6. Understand principle of patients' privacy and confidentiality in the clinical setting.
7. Distinguish between prophylactic empiric and therapeutic antibiotic treatment and appropriate use of antibiotics.
8. Performance and interpretation of radiologic studies, eg: CT Scan, BaE, ERUS contrast studies, etc.
9. Be able to work with the enterostomal nurse and understand ostomy care, patient education and stoma-related problems.

II. 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 are expected to:

PGY-3 and PGY-5

Colon Cancer

Know:

- Epidemiology of colon cancer
- Adenoma-Carcinoma sequence
- Risk factors
- Molecular genetics
- Bowel preparation
- Colorectal cancer screening
- Hereditary CRC syndromes
- Surgical management
- Adjuvant treatment
- Management of recurrent disease
- Management of metastatic disease
- Disease

Able to perform:

- Colonoscopy
- Polypectomy
- Segmental colectomy
- Total abdominal colectomy
- Laparoscopic colectomy

Rectal Cancer

Know:

- Preoperative evaluation
- Neoadjuvant therapy
- Adjuvant therapy (post-operative)
- Surgical management
- Management of recurrence
- Carcinoids
- Gastrointestinal stromal tumors

Able to perform:

- Endoscopic polypectomy
- Transanal excision
- Total mesorectal excision
- Sphincter sacrificing procedures (APR)
- Sphincter sparing procedures
- Multiorgan resection

Anorectal

Know:

- Anorectal anatomy
- Anal fissure
- Fistula in ano
- Abscess
- Hemorrhoids
- Pilonidal cysts
- Hidradenitis suppurativa
- Pruritus ani
- Genital warts
- Anal intraepithelial tumors
- Sexually transmitted infections
- Foreign bodies
- Anal trauma
- Presacral cysts
- Fecal impaction
- Radiation proctitis
- Fistula in ano
- Abscess
- Hemorroids Pilonidal Cysts
- Hidradenitis suppurativa
- Pruritus ani
- Genital warts - AIN
- Anal trauma
- Presacral cysts
- Fecal impaction
- Radiation proctitis

Able to perform:

- Sphincterotomy
- Incision and drainage
- Seton placement
- Hemorrhoid banding and sclerotherapy
- Procedure for prolapsing hemorroids
- Pilonidal cystectomy
- Excision and fulguration
- Presacral cystectomy
- Anal fistula surgical options, eg: LIFT procedures, flaps etc.
- Anoscopy, sigmoidoscopies and other office procedures

Benign Colon

Know:

- Pathophysiology of diverticulosis / diverticulitis

- Rectal prolapse
- Inflammatory bowel diseases
- Functional colonic obstructions
- Infectious colitis
- Sigmoid volvulus
- Ischemic colitis
- Pneumatosis

Able to perform:
- Colonoscopy
- Proctocolectomy with restorative pouch
- Proctocolectomy with Koch pouch
- Proctocolectomy with end ileostomy
- Prolapse procedures
- Laparoscopic colectomy

Pelvic Floor
Know:
Physiology of the pelvic floor
Evaluation of pelvic floor symptoms
Constipation
Incontinence
Rectocele

Able to perform:
Sphincteroplasty
Subtotal colectomy
Artificial sphincter management

III. 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:

1. Accept constructive criticism.

2(a) Apply appropriate communication skills with patients and families (in effective listening, awareness of non verbal cues, and use of open-ended questions)

2(b) Counsel and educate patients and families on their therapy options, their surgical outcomes, progress and home care needs.

3(c) Participate in the education of lower level residents and medical students.

IV. System 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. Provide timely and pertinent consultation when asked by another physician, nurses, and other health care personnel.
2. Diagnose any "system issues" associated with medical errors, complications and near misses that occurred during this rotation.

V. Professionalism

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

1. Demonstrate respect, compassion, integrity and honesty. Also personal responsibility for patient problems.
2. Understand and utilize primary policies, informed consent, business and medical ethics.

VI. Interpersonal and Communication Skills

Resident must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

1. Demonstrate effective, complete and legible note writing skills. Also, avoid use of forbidden abbreviations and promote policy to students and lower level residents.
2. Learn to give effective medical presentation to other providers on rounds at institutional conferences, and at local and national meetings.

Teaching Methods:

The resident will participate at Colon and Rectal Clinics, Anorectal Physiology Lab, Endoscopy Units, operative sessions, journal clubs and the department weekly compulsory M&M conference. All of these activities will be directly supervised by a Board Certified Colorectal surgeon, Board Certified General Surgery or Board Eligible Junior Staff. Also, other didactive actitivies as per attending of staff resources.

Assessment Method (residents):

Evaluation of residents will be performed on an established evaluation form based on ACGME criteria: patient care, medical knowledge, practice based learning and improvement, system based practice, professionalism and interpersonal and communication skills. Individual evaluation should be completed soon after the 6 weeks rotation.

These evaluation forms must be accessible for review by the residents in accordance with Institutional policy.

Assessment Method (Program Evaluation):

The residents and faculty must have the opportunity to evaluate the program confidentially in writing at least annually.

The Program must use the results of resident's assessments of the program together with other program evaluation results to improve it.

If deficiencies are found, the program should prepare a written plan of action to document initiatives to improve performance in the areas of weakness. The action plans should be reviewed and approved by the faculty and documented in meeting minutes.

Level of Supervision:

Residents will be supervised directly by: (2) Board Certified Colon Rectal Surgeon, (1) Board Certified General Surgeon, (Laparoscopic Surgeon) (2), Colon and Rectal Board Eligible junior staff. The qualified faculty will provide appropriate supervision of residents in patient care activities.

Educational Resources:

1. Journal Club: discussion of colon and rectal
2. M&M – every Wednesday at 4:30 pm.
3. Educational material
4. Possible trip experiences for national meetings to international residents.

Surgical Oncology (A and B) Competency Based Curriculum

Medical/Surgical Knowledge

PGY-1, PGY-2

1. Know how to interpret CT scans of head, chest, and abdomen, other radiographic studies, mammograms, laboratory values including tumor markers,
2. Understand tumor kinetics including biology of tumor growth and some therapeutic regimens including chemotherapy, radiotherapy, immunotherapy.
3. Understand the basic principles of surgical therapy for cancer.
4. Know basic anatomy of the hepatobiliary tract, pancreas, liver and GI tract.
5. Have a basic understanding of common cancers, i.e. breast, soft tissue, hepatobiliary, pancreatic, and GI

PGY-3-4

1. Have a working knowledge of evaluating a surgical oncology patient and be able to utilize studies, which are available and know indications to obtain others studies when evaluating a patient.
2. Be able to outline a basic treatment strategy for treatment of common types of cancer based upon stage. This should be both surgical and chemotherapy if indicated.
3. Have a working knowledge of anatomy and how surgical resection for tumors is influenced by the stage of cancer and the location of the cancer.

PGY-5

1. Be able to outline a unified plan of care for common cancers based upon stage, type of cancer, location and potential for resection.
2. Know the principles and approach to common cancers including a detailed understanding of the surgical approach.

Patient Care and Technical Skills:

PGY-1, PGY-2

Can expect to learn the listed skills and assume responsibility for managing patients with surgical oncologic problems under the close supervision of a senior resident or attending physician.

1. Be able to complete a comprehensive history and physical for a surgical oncology patient.
2. Be able to do appropriate pre and postoperative care for a surgical oncology patient.
3. Demonstrate basic use of surgical instruments.

Be able to perform the following operative procedures:

1. Breast biopsy
2. Perform a sentinel node biopsy
3. Open and close an abdomen
4. Perform an exploratory laparotomy
5. Mediport placement and removal

PGY-3-4

Will assume greater responsibility and advanced technical skills. These include:

1. Teaching medical students and junior residents
2. Organizing conferences
3. Organize and direct resuscitation of critically ill postoperative surgical oncology patients
4. Make daily management decisions

Be able to perform the following procedures:

1. Mastectomies
2. Colonic resection
3. Gastric resection

PGY-5

Will assume major responsibility on the service and have achieved complex technical skills required for the management of:

1. Daily surgical care
2. Organization of teaching conferences and rounds
3. Assigning resident staff to operative procedures
4. Deal with complex surgical problems in the surgical oncology patient

The following procedures including:

1. Major complex gastrointestinal surgery
2. Hepatic resection
3. Major cancer resections
4. Pancreatic operations

Interpersonal and Communication Skills

PGY-1, PGY-2 residents will develop and refine their individual style when communicating with patients.

- They will strive to create ethically sound relationships with patients, the physician team, the care team and the supporting hospital personnel. They will effectively communicate through accurate and complete notes on the electronic medical record.
- They will exhibit listening skills appropriate to patient-centered interviewing and communication.
- Residents will be able to communicate with patients concerning end-of-life decisions.

PGY-3 and **PGY-4** residents will exhibit team leadership skills through effective communication as a team manager.

- PGY-4 and PGY-5 residents are expected to assist junior peers, medical students and other hospital personnel to form professional relationships with support staff. Residents will respond to feedback in an appropriate manner and make necessary behavioral changes. Residents should be able to negotiate nearly all difficult patient encounters.
- PGY-4 and PGY-5 residents should function as team leaders with decreasing reliance on attending physicians.

Professionalism

- All residents will demonstrate integrity, accountability, respect, compassion, patient advocacy, and dedication to patient care that supercedes self-interest. Residents will demonstrate a commitment to excellence and continuous professional development. They will be punctual and prepared for teaching sessions.
- Residents will demonstrate a commitment to ethical principles pertaining to provision or withholding clinical care, confidentiality of patient information and informed consent.
- Residents are expected to show sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

Practice Based Learning and Improvement

PGY-1 and PGY-2 residents will use hospital and University library resources to critically appraise medical literature and apply evident to patient care.

• They will use hand-held computer, desktop PC's and internet electronic references to support patient care and self-education.

• They will model these behaviors to assist medical students in their own acquisition of knowledge through technology

PGY-4 and **PGY-5** residents will consistently seek out and analyze data on practice experience, identify areas for improvement in knowledge or patient care performace and make appropriate adjustments.

• They will regularly demonstrate knowledge of the impact of study design on validity or applicability to individual practice.

• PGY-6 residents will model independent learning and development and assist with the learning and development of junior residents.

Systems Based Practice

PGY-1 residents will be sensitive to health care costs while striving to provide quality care. They will begin to understand the place of appropriate consultation for the best care of their patients.

PGY-2 residents will understand and adopt available clinical practice guidelines and recognize the limitations of these guidelines. They will work with patient care managers, discharge coordinators and social workers to coordinate and improve patient care and outcomes.

PGY-4 and **PGY- 5** residents will utilize out-of-hospital resources to assist patients with therapeutic plans. These senior residents are expected to model cost-effective therapy.

TRAUMA AND EMERGENCY SURGERY CORE OBJECTIVES: PGY 1-2

GOALS

Through rotation on the trauma and emergency surgery service, residents shall attain the following goals:

I. Patient Care

a. Trauma Resuscitations: the resident should participate in each trauma resuscitation. His/her role is as delineated in the trauma resuscitation guidelines and as directed by the chief resident or faculty.

1. The resident is responsible for collecting and documenting the pre-hospital information, the results of the history and exam, the results of the laboratory and radiologic exams.
2. The resident should learn and master the following technical skills:
   a. Placement of Foley catheter
   b. Placement of nasogastric tube
   c. Placement of orogastric tube
   d. Arterial blood gas sampling: femoral and radial artery
   e. Placement of central venous catheter
   f. Placement of chest tube
   g. Perform and interpret FAST (Focused Abdominal Sonography in Trauma)

3. The resident should learn the normal and abnormal values for each of the laboratory tests ordered in the resuscitation and learn the appropriate interventions for each.

4. The resident should learn to interpret tests such as CT scans of the head, chest, abdomen and pelvis
5. Resident should participate in discussions concerning plan of care and status with the patient and/or family

A. Operative Care: Gain an experience that will build toward being competent in the performance of urgent and emergent surgeries; emergent procedures, and urgent ICU related procedures. Also, the resident shall gain experience in elective general surgery as performed by the TES Staff. 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. Incarcerated Groin Hernia, open (PGY 1-4)
   2. Incarcerated Abdominal wall hernia, open: umbilical, incisional, recurrent (PGY 1-4)
   3. Placement of venous catheter (PGY 1-2)
   4. Placement of arterial catheter (PGY 1-2)
   5. Appendectomy, open / laparoscopic (PGY 1-2)
   6. Drainage of intra-abdominal abscess, simple (PGY 1-2)

7. EGD/PEG (PGY 1-2)
8. Bronchoscopy (PGY1-2)
9. Groin Hernia, open (PGY 1-2)
10. Groin Hernia, laparoscopic (PGY 2-4)
11. Abdominal wall hernia, open: umbilical, incisional, recurrent (PGY 1-4)
12. Diagnostic laparoscopy (PGY 2-4)
13. Small bowel resection (PGY 1-2)
14. Colectomy, left/total (PGY 2-4)
15. Low anterior resection (PGY2-4)
16. Colectomy, right (PGY2-4)
17. Cholecystectomy, open (PGY 1-2)
18. Cholecystectomy, laparoscopic (PGY 2-4)
19. Enterolysis (PGY 2-4)
20. Soft tissue mass/infection/abscess, simple (PGY 1-2)
21. Soft tissue mass/infection/abscess, complex (PGY 2-4)
22. Groin Hernia, open (PGY 1-2)
23. Groin Hernia, laparoscopic (PGY 2-4)
24. Abdominal wall hernia, open: umbilical, incisional, recurrent (PGY 1-4)

B. Management of the Trauma Patient and Postoperative Patient

PGY-1&2 (junior) residents shall gain an experience in how to recognize and differentiate the below problems and conditions and be able to formulate and institute a strategy of care with the assistance of more senior residents or staff. Through evaluation of the postoperative patient, the resident shall be able to assess and manage:

a. Wound care and healing
b. Identify infected wounds
c. Identify wound seromas
d. Fluid and electrolyte abnormalities after surgery
e. Use and care of surgical drains and chest tubes
f. Identify infection: surgical site, blood, genitourinary, pulmonary, catheter-related
g. Identify cardiopulmonary complications: myocardial infarction, pulmonary edema, atelectasis, pulmonary embolism, pneumonia
h. Identify of renal impairment/failure: pre-renal azotemia, acute renal failure, IV-dye associated renal impairment
i. Identify a patient's readiness for discharge
j. Identify a patient's need for rehabilitation or nursing home placement

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 resident discussion sessions.

B. Residents are expected to attend Multidisciplinary Trauma Conference on Thursday morning.

C. It is expected that residents will educate themselves upon the scientific information relating to trauma and emergency surgery. The recommended texts by the department are Greenfield's Surgery Scientific Principles and Practice and O'Leary's The Physiologic Basis of Surgery should serve as basic texts. Residents are, however, encouraged to use additional sources more specific to Trauma and Emergency Surgery. It is expected that residents on the Trauma and Emergency Surgery Service will read about the various disease processes that they encounter in the clinic, on the wards and in the operating room.

1. System function: residents shall gain an understanding of the anatomy, physiology, and function of organs and organ systems affected general surgical conditions and operative procedures. 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 trauma and emergency surgery.
2. Disease process: residents shall become familiar with the various disease processes and complications affecting the organ systems commonly seen in trauma and emergency surgery patients
3. Follow-up therapy: residents shall gain an understanding of the follow-up needed and recommended for various trauma and emergency surgical procedures

D. It is expected that the resident will educate themselves utilizing scientific information, on line technology, and didactic sessions on all pathophysiology and procedures as listed in the Patient Care Goals.

III. Practice-based Learning

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

1. Morbidity & Mortality Conference – Discussion should center on an evidence-based discussion of complications and their avoidance.
2. Residents shall keep logs of their operative cases and all procedures 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 trauma and emergency surgery team.

B. Residents shall foster an atmosphere that promotes the time efficiency and each member of the 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 procedures or surgeries
G. Residents shall perform an appropriate and effective review and checkout to their colleagues whenever they must be absent, i.e. post call, conferences, night float

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 80-hour duty 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. SICU M&M
    c. Trauma Multidisciplinary Conference

2. Other
    a. Trauma Performance Improvement (PGY 4)
    b. Trauma clinic
    c. Emergency Department

Rotation: University Hospital Trauma Service

Year: PGY 3-4

Description of Rotation:
The trauma surgery service at University Hospital cares for over 2500 patients per year. The senior resident is expected to evaluate all trauma patients, develop a care plan and provide definitive care for the injured patient to include operative intervention. The resident is taught to manage the largest service in the hospital efficiently while recognizing the life threatening problems quickly and is taught the surgical interventions needed to manage traumatic injuries. An emphasis is placed on leadership skills and leading the trauma team in an effective manner.

Overall Goals

1. To learn principles of trauma care.
2. To develop an organized approach to the assessment, resuscitation, stabilization and provision of definitive care for the trauma patient.
3. To learn the use of diagnostic imaging and procedural modalities available for the evaluation of the trauma patient.
4. To further develop procedural skills necessary in the evaluation and management of the trauma patient.
5. To learn to recognize and treat immediate life and limb threatening injuries in the trauma patient.

I. Patient Care

Goal – Senior Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of the traumatically injured patient. Residents are expected to acquire the following:

Competencies –

1. Demonstrate ability to rapidly and thoroughly assess patients suffering from major trauma.
2. Demonstrate ability to establish priorities in the initial management of patients sustaining life-threatening trauma.
3. Learn principles of fluid resuscitation of trauma patients.
4. Discuss the continuing care of the trauma patient, including operative, post-operative and rehabilitative phases of care.
5. Demonstrate ability to interpret radiographs on trauma patients, including chest, pelvis, cervical, thoracic and lumbar spine, and extremity films.
6. Demonstrate ability to utilize imaging modalities, including ultrasonography, in the evaluation of the trauma patient.
7. Discuss the importance of mechanism of injury in the evaluation and treatment of the trauma patient.

9. Discuss the appropriate use of analgesics and sedatives in the trauma patient.
10. Demonstrate ability to coordinate consultants involved in the care of multiple trauma patients.

Procedures: Learn the techniques, indications and potential complications and when appropriate perform the following:

1. Bedside Procedures: Oral and nasal endotracheal intubation, cricothyroidotomy, tube thoracostomy, insertion of large bore peripheral and central venous lines, venous cutdowns, oral and nasogastric intubation, peritoneal lavage, local wound exploration, reduction and immobilization of joint dislocations, splinting of extremity fractures, insertion of arterial lines.
2. Management of esophageal trauma
3. Management of gastric trauma
4. Management of duodenal trauma
5. Management of small bowel trauma
6. Management of colon trauma
7. Neck exploration for trauma
8. Exploratory thoracotomy, resuscitative thoracotomy, aortic cross-clamping,
9. Exploratory laparotomy
10. Splenectomy/splenorrhaphy
11. Repair hepatic lacerations
12. Resection/Repair/Drainage pancreatic injury
13. Debride/suture major wounds
14. Repair/resection for kidney trauma
15. Repair ureteral injury
16. Repair bladder injury
17. Repair of carotid artery injury
18. Repair of abdominal aorta or vena cava injury
19. Repair peripheral vessels
20. Fasciotomy for injury
21. Repair cardiac injury, pericardiotomy, cardiorraphy

Objectives:

1. Demonstrate proper management of traumatized patient from ED to OR to SICU to ward and to rehabilitation or home.
2. Demonstrate knowledge of traumatic injuries to include above list at an advanced level.
3. Perform satisfactorily at an advanced level the following procedures:
    a. Tracheostomy (percutateous/open)
    b. Gastrostomy tube placement
    c. Exploratory laparotomy for trauma
    d. Procedures listed above
4. Demonstrate compassion and understanding during the patients postoperative visits.
5. Evaluate and be vigilant for common postoperative complications such as wound infections and manage appropriately

II. Medical Knowledge

Goal - 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 are expected to discuss the following:

Competencies:

1. Blunt trauma/Penetrating trauma
2. Neck injuries [Vascular]
3. Neck injuries [Trachea/Larynx]
4. Neck injuries [Pharynx/esophagus]
5. Neck injuries [Nerve]
6. Chest injuries [Rib fractures]
7. Chest injuries [Sternal fractures]
8. Chest injuries [Flail chest]
9. Chest injuries [Pneumothorax]
10. Chest injuries [Hemothorax]
11. Chest injuries [Pulmonary contusion]
12. Chest injuries [Pulmonary laceration]
13. Chest injuries [Myocardial contusion]
14. Chest injuries [Cardiac tamponade]
15. Chest injuries [Esophageal injury]
16. Abdominal injuries [Diaphragm]
17. Abdominal injuries [Spleen]
18. Abdominal injuries [Liver]
19. Abdominal injuries [Stomach]
20. Abdominal injuries [Duodenum]
21. Abdominal injuries [Pancreas]
22. Abdominal injuries [Small intestine]
23. Abdominal injuries [Colon and rectum]
24. Retroperitoneal injuries [Retroperitoneal hematoma]
25. Retroperitoneal injuries [Pelvic fractures]
26. Retroperitoneal injuries [Renal injuries]
27. Retroperitoneal injuries [Bladder injuries]
28. Retroperitoneal injuries [Ureteral injuries]
29. Vascular injuries [Head/neck]
30. Vascular injuries [Thorax]
31. Vascular injuries [Abdomen]
32. Vascular injuries [Extremity]
33. Pediatric trauma
34. Geriatric trauma
35. Trauma in pregnancy

Objectives:

Using the knowledge outlined above it is expected that the resident be able to perform the following tasks:

1. Discuss the indications for surgical intervention and the possible alternatives. (specific to disease process)

2. Discuss the possible complications of specific procedures and the treatment possibilities. (specific to disease process)
3. Be able to make appropriate intraoperative decisions regarding surgical treatment based on surgical findings.
4. Appropriately request specialized help when needed.

III. Practice- Based Learning and Improvement

Goal - 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:

Competencies:

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. Participate in the education of patients, families, students, residents, and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and or learners.

Objectives

The Senior resident will become an effective trauma team leader and demonstrate self-directed learning, as well as educate junior residents and medical students.

IV. Interpersonal and Communication Skills

Goal-The surgery resident will demonstrate interpersonal and communications skills that result in the effective exchange and collaboration with patients, their families and other health professionals.

Competencies

1. Communication with the patient / family demonstrating the ability to clearly convey the information at a level appropriate for the patient. This includes expression of the risks, benefits, and possible complications of surgical procedures.
2. Demonstrate the ability to manage the surgical team with concise communication, while continually treating all members (Junior Residents, Physician Extenders, Nurses, Ancillary Staff) with respect.
3. Demonstrate the ability to maintain, coordinate, and lead the multidisciplinary management of critically ill surgical patients.
4. Must demonstrate the ability to teach effectively and constructively to all members of the surgical team. Specifically provide ongoing graduated responsibility to junior residents in both patient care and operative intervention so as to foster growth and independence.

Objectives

1. The resident will communicate well with patients, families, consulting services, and coworkers as evaluated by Trauma Nurse Clinicians
2. The resident will effectively lead the Trauma Team in the ER, OR, ICU, ward, and clinic
3. The resident will actively teach junior residents and medical students.

V. Professionalism

Goal: The surgery resident will demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Competencies

1. Demonstrate compassion and respect for patients, families and other health care providers.
2. Maintains a professional and mutually respectful working relationship with peers, subordinates, and all levels of health care providers.
3. Demonstrates a responsiveness to patient needs that supersedes self interest.
4 Maintains patient's confidentiality and autonomy.
5. Maintains punctuality and reliability.
6. Exhibits appropriate attire at all times.

Objectives

1. The senior resident will behave as a consummate professional at all times
2. The resident will be responsive to patient needs
3. The resident will maintain a professional and mutually respectful working relationship with peers, subordinates, and all levels of health care providers.

VI. System-Based Practice

Goal: The resident will demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to call effectively on other resources in the system to provide optimal health care.

Competencies

1. Demonstrate the ability to work effectively in a University health care system
2. Demonstrate the ability to coordinate patient care
3. Demonstrate cost effective patient care and resource allocation.
4. Participates in identifying system errors and helps implement potential systems solutions.
   - Work in interprofessional teams to enhance patient safety and improve patient care quality through the TUH Trauma Service PI Committee
   - Participate in identifying systems errors and in implementing potential systems solutions through the TUH Trauma Service PI Committee

Objectives

1. The resident will effectively coordinate patient care among multiple services.
2. The resident will be able to discuss appropriate resource utilization each morning at sign-out rounds.

3. The resident will actively participate in monthly Trauma Service PI Committee meetings

Teaching Methods

1. Direct teaching by attending physician in the trauma bay, operating room and during patient care in the hospital.
2. Daily rounds- work/teaching rounds are conducted each morning in the SICU conference room followed by walk rounds with the daytime trauma attending seeing each patient with the on call team. The SICU faculty of the week and many of the trauma faculty attend the morning report where new patients are discussed in detail complete with xrays and labs. The residents are expected to present a succinct summary of each patient and outline a plan of care for the day.
3. Outpatient care is performed each Friday morning for 3-4 hours and the residents are evaluated on their presentations and care techniques.
4. Each Thursday at noon a resident trauma case conference is held. The conference is interactive and the senior resident is expected to respond to questions concerning the proper management of injuries at an appropriate level of sophistication.

Assessment Method (residents)

1. Verbal feedback during operations, patient care, and in clinic.
2. Initial written assessment reviewed with residents midway through the rotation
3. Written evaluation by nurse clinicians at conclusion of rotation
4. Formal observed operation, including trauma laparotomy
5. Written self evaluation at conclusion of rotation
6. Written evaluation by faculty at conclusion of rotation

Assessment Method (Program Evaluation)

1. Written feedback instrument at completion of rotation
2. Performance on ABSITE examination (yearly)
3. Performance on Mock oral exams (yearly)

Level of Supervision

The Senior resident will supervise junior residents and medical students. The nighttime and weekend Attending call schedule is available to all in the Divisional office. An attending surgeon is available in-house 24 hours daily as needed for discussion, consultation, and patient care.