

## **TRAUMA AND EMERGENCY SURGERY ROTATION CORE OBJECTIVES**

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

### *Patient Care*

#### A. Trauma Resuscitations

1. 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 (PGY1, 2)
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 (PGY1, 2)
2. The resident is the team leader for each trauma resuscitation. He/She should implement the trauma resuscitation guidelines. He/She should direct all members of the team if additional procedures/evaluation needs to be completed, ie central access (PGY4,5).
3. The resident should be able to order appropriate laboratory and radiologic exams and interpret the results (PGY4,5).
4. The resident should manage the fluid resuscitation of each patient, for example fluid rates and type, fluid boluses, need for blood (PGY4,5).
5. The resident should be able to identify and correct coagulopathy (PGY4,5).
6. The resident should learn and master the following technical skills:
  - a) Placement of Foley catheter (PGY1, 2)
  - b) Placement of nasogastric tube (PGY1, 2)
  - c) Placement of orogastric tube (PGY1, 2)
  - d) Arterial blood gas sampling: femoral and radial artery (PGY1, 2)
  - e) Placement of central venous catheter (PGY1, 2)
  - f) Placement of chest tube (PGY1, 2)
  - g) Perform and interpret FAST (Focused Abdominal Sonography in Trauma) (PGY1, 2)
  - h) 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. (PGY1, 2)
  - i) The resident should learn to interpret tests such as CT scans of the head, chest, abdomen and pelvis (PGY1, 2)
  - j) Resident should participate in discussions concerning plan of care and status with the patient and/or family (PGY1)
  - k) Be able to teach all procedures listed for the PGY 1-3 (PGY4,5).
  - l) Perform open DPL (PGY4,5).
  - m) Discuss and demonstrate cricothyroidotomy (PGY4,5).
  - n) Discuss and/or demonstrate emergent thoracotomy (PGY4,5).
  - o) Discuss and/or demonstrate aortic occlusion (PGY4,5).
  - p) Discuss and/or demonstrate pericardotomy (PGY4,5).

q) The resident will review the care plan with attending within 20 minutes of patient arrival (PGY4,5).

B. 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. 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. Placement of venous catheter (PGY1,2)
2. Placement of arterial catheter (PGY1,2)
3. EGD/PEG (PGY1, 2)
4. Bronchoscopy (PGY1,2)
5. Soft tissue infection/abscess, simple (PGY1,2)
6. Placement of Swan-Ganz catheter (PGY2)
7. Small bowel resection and anastomosis (PGY2-5)
8. Small bowel repair for trauma (PGY2-5)
9. Feeding tube, open (PGY2)
10. Drainage of intra-abdominal abscess, simple (PGY 2-3)
11. Splenectomy, open for trauma (PGY3-5)
12. Tracheostomy (PGY2-5)
13. Percutaneous Tracheostomy (PGY2-5)
14. Enterolysis (PGY2)
15. Soft tissue infection/abscess, simple (PGY1,2)
16. Soft tissue infection/abscess, complex (PGY2-5)
17. Exploratory laparotomy/damage control laparotomy (PGY4,5)
18. Diagnostic laparoscopy (PGY4,5)
19. Hepatic packing for trauma (PGY4,5)
20. large bowel resection, anastomosis or diversion (PGY4,5)

21. drainage of intra-abdominal abscess, complex (PGY4,5)
22. pancreatic debridement or drainage for trauma (PGY4,5)
23. emergent cricothyroidotomy (PGY4,5)
24. emergent thoracotomy (PGY4,5)

#### C. Surgical Intensive Care Unit

1. Residents should be able to assist (PGY2,3) or independently direct (PGY4,5) the continued resuscitation of the critically ill trauma patient. This includes coordination of consult services, direction of junior residents and continued evaluation of the patient (PGY4,5).
2. Residents should be able to independently place catheters such as central venous catheter, Swan-Ganz catheter, and arterial catheters (PGY2-5)
3. Residents should be able to implement a resuscitation plan and evaluate patient's response and progress (PGY2,3)
4. Residents should be able to direct resuscitation including use of crystalloids, colloids, vasopressors and inotropes (PGY4,5).
5. Resident should be able to independently identify deterioration in patient's status and assist in implementation of a plan of improvement (PGY2,3) or develop a plan of intervention that will be discussed with the attending staff (PGY4,5)
6. Resident should participate in discussions (PGY2,3) or independently lead discussions (PGY4,5) concerning plan of care and status with the patient and/or family

#### D. Management of the Trauma Patient and Postoperative Patient

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

##### Wound care and healing

- a) Identify (PGY1,2) and treat (PGY2-5) infected wounds
- b) Identify (PGY1,2) and treat (PGY2-5) wound seromas
- c) identify and treat wound dehiscence (PGY2-5)
- d) Fluid and electrolyte abnormalities after surgery (PGY1-5)

- e) Use and care of surgical drains and chest tubes (PGY1-5)
- f) Identify infection: surgical site, blood, genitourinary, pulmonary, catheter-related (PGY1-5)
- g) Identify (PGY1,2) and evaluate (PGY2-5) cardiopulmonary complications: myocardial infarction, pulmonary edema, atelectasis, pulmonary embolism, pneumonia
- h) Identify (PGY1,2) and evaluate (PGY2-5) renal impairment/failure: pre-renal azotemia, acute renal failure, IV-dye associated renal impairment
- i) Identify the need for parenteral nutrition and employ its use (PGY2-5)
- j) Identify a patient's readiness for discharge (PGY1-5)
- k) Identify a patient's need for rehabilitation or nursing home placement (PGY1-5)

*Medical Knowledge* (all PGY unless otherwise indicated)

- 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.
- Residents are expected to attend Multidisciplinary Trauma Conference on Thursday morning.
- It is expected that residents will educate themselves upon the scientific information relating to trauma and critical care.
- System function: residents shall gain an understanding of the anatomy, physiology, and function of organs and organ systems affected by traumatic conditions and operative procedures
- 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 (PGY1)
- Residents shall be able to display an understanding of the anatomy, physiology and function of the organs and organ systems affected by trauma and emergency surgery (PGY2)
- Residents shall be able to teach the anatomy, physiology and the function of organs and organ systems affected by general surgical and trauma conditions and operative procedures (PGY4,5)

- Disease process: residents shall become familiar with the various disease processes and complications affecting the organ systems commonly seen in trauma patients.
- Follow-up therapy: residents shall gain an understanding of the follow-up needed and recommended for various trauma and emergency surgical procedures.
- 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.

*Practice-based Learning* (all PGY unless otherwise indicated)

- Residents are expected to critique their performance and their personal practice outcomes
- Morbidity & Mortality Conference – Discussion should center on an evidence-based discussion of complications and their avoidance.
- 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
- Keep a log of all non-operative trauma cases admitted to the SDU or ICU in which they were the team leader, complications and outcomes (PGY4,5)

*Interpersonal and Communication Skills*

- Residents shall work with all caregivers on the multi-disciplinary team to foster excellent communication to all team members regarding care (PGY1)
- Residents shall learn to work effectively as part of the trauma and emergency surgery team (PGY1-5)
- Residents shall foster an atmosphere that promotes the time efficiency and effectiveness of each member of the team (PGY1-5)
- Residents shall interact with colleagues and members of the ancillary services in a professional and respectful manner (PGY1-5)
- Residents shall learn to document their practice activities in such a manner that is clear and concise (PGY1-5)
- Residents shall gain an experience in educating and counseling patients about risks and expected outcomes of procedures or surgeries (PGY1-5)

- Residents shall perform an appropriate and effective review and checkout to their colleagues whenever they must be absent, IE post-call, conferences, night float (PGY1-5)
- Residents shall participate in the informed consent process for patients being scheduled for elective and emergent/urgent procedures or surgery (PGY2-5)
- Residents will attend hand-off conference to assist in communication of transfer of care (PGY1)

### *Professionalism (all PGY)*

- Residents shall maintain high ethical standards in dealing with patients, family members, patient data, and other members of the healthcare team
- Residents shall demonstrate a commitment to the continuity of care of a patient within the confines of the 80-hour duty restrictions
- Residents shall demonstrate a sensitivity to age, gender, and culture of patients and other members of the healthcare team

### *Systems-based Practice*

1. Residents shall learn to practice high quality cost effective patient care. This knowledge should be gained through discussions of patient care (all PGY unless otherwise indicated).
  - Conferences
  - M&M
  - SICU M&M
  - Trauma Multidisciplinary Conference
  - Monthly trauma simulation
  - Trauma Performance Improvement (PGY 4-5)
  - Trauma clinic