

# **Trauma Rotation**

## **UMASS Memorial – University Campus**

*\* The following objectives include goals and achievements set forth for successful completion in the acute surgery & trauma rotation such that residents who receive a passing evaluation have completed the outlined objectives of the institution itself as well as those set forth by the ACGME Outcome Project in the areas including but not limited to patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice.*

### **TRAUMA COMPETENCIES**

The Trauma Service is a surgical service based in general surgery that manages all of the acutely ill general surgery patients. These patients include, but are not limited to, all patients that have emergent problems related to surgical disease, patients with surgical disease that involve multiple organ systems and present with complex organ system and multi-specialty management problems, all trauma patients and the burn patients who are in the acute stages of resuscitation and care. This service works closely in a multi-disciplinary fashion with the medical and surgical sub-specialty groups and the Surgical Critical Care team to provide the most efficient and highest quality of care that result in optimal resource utilization in a safe patient care environment. These patients may initially be located in the Emergency Department, on the medical center nursing floors, in the medical center ICUs and occasionally in the outpatient clinics.

For the purposes of uniformity and consistency, the following guidelines and principles will initially be utilized for the competencies related to the Trauma components of the General Surgery training. These objectives will be refined on an annual basis and will reflect the core guidelines set by the Dept. of Surgery for the General Surgery training program.

### **PGY-1 Rotations:**

#### **MEDICAL KNOWLEDGE/PATIENT CARE**

The resident will demonstrate a cognitive understanding of the following topics and an ability to translate the issues into his/her clinical practice.

- ✓ Identify the Blunt Trauma Patient
- ✓ Identify the Penetrating Injury Trauma Patient
- ✓ Perform primary exam for resuscitation
  - Identify problematic airway
  - Identify pulmonary contusion
  - Identify hemothorax/pneumothorax
  - Identify ongoing hemorrhage
  - Identify hypotension
  - Identify Shock
    - Identify HEMORRHAGIC shock
    - Identify NEUROGENIC shock
    - Identify SPINAL Shock
  - Identify asymmetric exam results
- ✓ Perform secondary exam for resuscitation
  - Includes complete physical exam with special attention to the following
    - Identify neurologic deficits

- Identify gross abnormalities of the extremity
  - Perform spine examination
- Facilitate patient transfers
- Perform bedside procedures
  - Able to maintain STERILE technique
  - Placement of foley catheter
  - Able to gain central venous access
  - Obtain arterial blood gas
    - Interpret blood gas
  - Able to perform simple closures of soft tissue injuries
  - Able to irrigate and debride simple superficial wounds
- ✓ Identify laboratory abnormalities
  - Correct lab abnormalities
  - Identify necessary and unnecessary labs
- ✓ Working knowledge of patients injuries and co-morbidities
- ✓ Able to clinically clear the spine after identifying the appropriate patient
- ✓ Know and apply the basic and clinical sciences applicable to the patients disease chiefly pertaining to their surgical disease and management
- ✓ The resident will demonstrate compassionate and effective care in dealing with all patients, especially those in end-of-life situations and those with special needs (e.g., due to drug/alcohol withdrawal or overdose).
- ✓ The resident will demonstrate appropriate courtesy and respect for all patients during examination, procedures and rounds regardless of whether the patient is awake, or intubated and sedated.

### **PGY-3/4 Rotations:**

#### **MEDICAL KNOWLEDGE/PATIENT CARE**

The resident will demonstrate a cognitive understanding of the following topics and an ability to translate the issues into his/her clinical practice.

#### ***Includes the Competencies of the PGY-1 plus the following:***

- ✓ Identify the Blunt Trauma Patient and those with mechanisms of injury which are associated with greater injury
  - Early determination of disposition
    - Radiographic evaluation
      - Able to perform FAST exam
        - Able teach junior residents indications and aspects of the FAST exam
      - Able to read plain films and CT scans with reliability
      - Able to follow up with appropriate studies
    - Able to consult sub specialists in an appropriate, timely fashion
    - Invasive procedures
      - Able to recite indications/contraindications
      - Able to instruct junior residents through procedures
        - To include but not limited to central lines, intubation, bronchoscopy, PEG, tracheostomy

- ✓ Identify the Penetrating Injury Trauma Patient and those findings which are associated with greater likelihood of instability
  - Early determination of disposition
    - Able to perform invasive procedures expeditiously
      - Able to recite indications/contraindications
      - Able to instruct junior residents through procedures
    - DPL
      - Able to recite indications/contraindications
      - Able to instruct junior residents through procedures
    - Tube thoracostomy
      - Able to recite indications/contraindications
      - Able to instruct junior residents through procedures
    - Central venous access with ultrasound guidance
      - Able to recite indications/contraindications
      - Able to instruct junior residents through procedures
    - Emergency airway
      - Able to recite indications/contraindications
- ✓ Perform primary exam
  - Identify problematic airway
    - Able to describe and perform surgical management
  - Identify pulmonary contusion
    - Able to describe common methods of management
    - Able to describe pitfalls of management and institute appropriate therapy
  - Identify hemothorax/pneumothorax
    - Able to manage and teach the appropriate therapy
  - Identify ongoing hemorrhage
    - Able to perform surgical exploration to include thoracotomy, thoracoscopy, neck exploration, damage control laparotomy (Cattel, Mattox, Kocher, maneuvers).
    - Able to identify and manage common complications and correction of bleeding
      - Blood transfusions
      - Blood dyscrasias and coagulopathies
      - Blood borne diseases
    - Able to identify those situations where Damage Control Surgery is best performed and when it is not
  - Identify Hypotension
    - Manage and treat hypotension appropriately
    - Know when to transfuse blood vs crystalloid
    - Know when invasive monitoring may be indicated
  - Identify Shock
    - Describe the classifications of shock
    - Identify HEMORRHAGIC shock
      - Able to treat appropriately
    - Identify NEUROGENIC shock

- Able to treat appropriately
  - Identify SPINAL Shock
    - Able to differentiate from NEUROGENIC shock
- Identify asymmetric exam
  - Able to order appropriate labs/studies
  - Able to make appropriate consults to specialty services
- ✓ Perform secondary exam
  - Includes complete physical exam with special attention to the following
    - Identify neurologic deficits
    - Identify gross abnormalities of the extremity
      - Able to assist with reduction
        - Hare Traction Splint
        - Appropriate sedation
        - Application of Buck's Traction
        - Application of balanced traction via tibial pin
    - Perform spine examination
  - Facilitate transfers
  - Perform bedside procedures
    - Able to maintain STERILE technique with global precautions
    - Use and teach principles of Wide Sterile Draping
    - Placement of foley catheter
    - Able to gain central venous access with ultrasound guidance
    - Obtain arterial blood gas
      - Interpret blood gas
    - Able to perform simple closures of soft tissue injuries
    - Able to irrigate and debride simple superficial wounds
    - Surgical exploration for blunt and penetrating injuries
      - Able to recite indications/contraindications
      - Able to instruct junior residents through procedures
      - Able to provide indications/contraindications and management of the damage control laparotomy
      - Able to work up, diagnose, and treat, diaphragm injuries
      - Able to manage and treat chest wall defects
      - Able to identify candidates, grade, manage the non-operative solid organ injury. This includes identifying failed non-operative management and operative conduct. In splenic injuries, the resident must be able perform/describe splenectomy, splenectomy with distal pancreatectomy, splenorraphy, consult for angioembolization.
      - Able to identify and treat pancreatic injuries.
        - Able to resect and/or drain pancreatic injuries
      - Able to identify, manage, duodenal injuries
        - Describe and perform primary repair, diversion, and exclusion.
      - Able to identify and manage Genitourinary injuries
        - Renal hematomas and lacerations

- Angiography/embolization/resection
  - Urethral injuries
    - Describe and perform with faculty common repair techniques. Know indications/contraindications/complications
  - Recognize signs of urethral injury, appropriate work up and treatment including performance of the retrograde urethrogram
  - Bladder injuries
    - Identification and management and surgical repair
- Able to identify and manage peripheral vascular injuries
  - Identify those patients whom require surgical intervention versus operation, versus anticoagulation versus interventional stenting
  - Describe/perform general operative conduct for exploration and repair
- Able to identify great vessel injury
  - Able to describe options of management
    - Open versus endovascular versus medical management
- Able to identify indications/contraindications, candidates, outcomes of the resuscitative thoracotomy (RT)
  - Able to describe/perform RT
- Able to identify/manage the patient with retained hemothorax
  - Able to describe/perform VATS
- ✓ Able to clinically clear the spine after identifying the appropriate patient
- ✓ The resident will demonstrate compassionate and effective care in dealing with all patients, especially those in end-of-life situations and those with special needs (e.g., due to drug/alcohol withdrawal or overdose).
- ✓ The resident will demonstrate appropriate courtesy and respect for all patients during examination, procedures and rounds regardless of whether the patient is awake, or intubated and sedated.

### **PRACTICE-BASED LEARNING AND IMPROVEMENT**

Residents will be given feedback, during rounds and individually, regarding their patient care skills, and their ability to identify and critique evidence-based practices and to implement them in practice. Each resident will be assisted in critically evaluating his/her patient care skills, and encouraged to continually improve throughout the rotation.

#### **Specific Objectives for PGY3/4:**

- ✓ Instructs junior residents on rounds, conferences
- ✓ Plans weekly conferences in conjunction with the Trauma Attending
- ✓ Assigns case studies at trauma conferences within appropriate time frame
  - Able to lead the discussion on cases assigned to juniors

## **INTERPERSONAL AND COMMUNICATION SKILLS**

Residents will be encouraged to work with patients and their families to master communication skills which allow for effective explanation of the patient's current condition, plan of care and questions regarding such matters from the patient and family. Residents will be encouraged to identify themselves with the patient and family as one of the responsible care providers on the team, and to interact accordingly.

Residents will be expected to work and communicate effectively with nursing and respiratory staff to facilitate achievement of the goals set daily for the patients. Residents will also be expected to communicate daily with the patient's primary surgical team, as well as in the situation of a change in the plan of care or condition of the patient.

### **Objectives for all resident levels:**

- ✓ Round and perform daily notes on the trauma service patients
- ✓ Able to complete admitting orders without difficulty
- ✓ Able to deliver a complete SIGN-OUT to colleagues
- ✓ Maintains dialogue with Radiology technicians to expedite studies
- ✓ Use effective listening skills that elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- ✓ Use effective listening skills that elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- ✓ Presents case studies at trauma conferences
- ✓ Round and perform daily notes on the trauma service patients
- ✓ Use effective listening skills that elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- ✓ Maintain an up-to-date Trauma Census
  - Includes accurate diagnosis', appropriate medications, dates, lab values, procedures, etc

## **PROFESSIONALISM**

Residents will be evaluated on their professional demeanor. This will include demonstration of a readiness and commitment to fulfilling patient care needs; professional and ethical conduct with patients and their families, as well as with other health care staff; and a sensitivity to special concerns of their patients as relates to their economic or social concerns.

- ✓ Able to complete orders/admitting note in a timely and complete fashion
- ✓ Assist colleagues with management and disposition issues
- ✓ Dresses appropriately at all times
- ✓ Presents case studies at trauma conferences
- ✓ Demonstrate professionalism, integrity, compassion with ones own peers, faculty, and patients
  - Perform with accountability to patients and ones own profession with a commitment and performance dedicated to excellence
  - Maintain patients' rights responsibilities to include privacy, informed consent, and confidentiality.
- ✓ Demonstrate sensitivity and responsiveness to culture, gender, age, and disabilities
- ✓ Attend and fully participate in all conferences ON TIME except when post call
- ✓ Attend and fully participate in all clinics ON TIME except when post call
- ✓ Maintains integrity on trauma service

- Takes ownership and responsibility of trauma patients
- Ensures co-operation of junior members as well as specialty services for the trauma service patients
- ✓ Able to complete admitting orders without difficulty

### **SYSTEMS-BASED PRACTICE**

#### **Specific objectives for all resident levels:**

- ✓ Residents will develop and demonstrate knowledge of admission and discharge criteria for patients and acquire an understanding of bed flow management problems between the ED, ICU, OR, PACU and floor.
- ✓ Residents will function on the Trauma Team to maximize effective and coordinated patient care thereby utilizing the expertise of nursing, respiratory therapy, nutrition, pharmacy, social services, case management and other ancillary health care providers.
- ✓ Residents will understand the design and implementation of Clinical Management Guidelines, recognize their limitations, and demonstrate their capacity to incorporate them into daily patient care.

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