UMass Memorial Health
UMASS MEMORIAL MEDICAL CENTER

Policy	
2013 Criteria for Trauma Team Activation (Adult and Pediatric)	
Developed By: Division of Trauma	**Effective Date:** 1/19/2022
Policy Owner: Bruce Simon, MD, Director of Trauma and Surgical Critical Care	**Approved by:** Michael L. Gustafson, MD, MBA President, UMass Memorial Medical Center
Applicability: This policy applies to workforce members of the Emergency Department and the Department of Surgery, on University and Memorial Campus.	
Keywords: Trauma, Trauma Team, Adult Trauma, Pediatric Trauma	

Policy

To provide optimal trauma care for trauma patients (adult and pediatric), under the direction of the adult or pediatric attending surgeon, UMMMC will:

- Immediately identify adult and pediatric trauma patients with potentially life or limb threatening injuries based on physiological and/or anatomic criteria.
- Activate the Trauma Team for immediate, expeditious resuscitation and management of the injured patient.
- Identify patients who require immediate transfer from the Memorial Campus to University Campus, for evaluation by the Trauma Service.

Definitions

Adult: For the purposes of this policy, all patients age 18 and over

Pediatric: For the purposes of this policy, all patients 17 and younger

Geriatric: For the purposes of this policy, all patients 70 years or older

Trauma Team: Consists of an Attending Trauma Surgeon, Surgical Residents and Emergency Medicine Residents. A page is sent out from Transfer Referral and Access Center (TrAC) or Life Flight, alerting the team of an incoming activation.

All trauma patients are categorized by their level of acuity in accordance with the following criteria:

LEVEL I CRITERIA
The Trauma Team assumes all care of Level I trauma patients and is expected to be in the trauma bay upon the patient's arrival.

- Any intubated patient
- SaO2: less than 90% or respiratory compromise requiring airway assist
- Adult systolic blood pressure 90 mmHg or lower

- Pediatrics (age 17 and younger): less than 2 times the pediatric patient's age plus 70 mm Hg.
- Geriatric (age 70 years and older): systolic BP 110 mmHg or lower
- Respiratory rate Adult: less than 10/min ***or*** more than 30 respirations /min, ***or*** abnormal efforts
- Respiratory rate Pediatrics: less than 10/min ***or*** more than 40/min **or** abnormal respiratory effort
- Glasgow Coma Scale (GCS): 10 or less (adult) or 8 or less (pediatric)
- Any inter-hospital trauma transfer receiving blood products to maintain vital signs
- All gunshot wounds to the head, neck, chest, or abdomen.
- Any gunshot wound to an extremity proximal to the elbow or knee (adult)
- All gunshot wounds in patients less than 18 years old
- All stab wounds and penetrating injuries to any body area, with large blood loss at the scene, ongoing hemorrhage, or with a rapidly expanding hematoma (arterial bleeding)
- Major impalement injuries of any body region
- Major crush injury to the torso and/or pelvis, with or without open wounds
- Complete or partial amputation, proximal to the elbow or knee
- Any penetrating injury of the head or face for which cranial penetration has not been ruled out.
- Any penetrating injury of the neck for which muscular (platysma) penetration has not been ruled out
- Other blunt or penetrating injury to the neck, chest or abdomen, with evidence of:
  - *saliva or air bubbling from a neck wound,
  - *difficulty in phonation
  - *stridor
  - *evidence of a cerebral infarction/stroke
  - *flail chest
  - *massive hemopneumothorax
  - *large open chest wound
  - *rapidly expanding abdomen
  - *abdominal evisceration
  - *large open abdominal wound
- Extremity tourniquet in place or any non-compressible, or on-going hemorrhage
  Emergency Medicine or Trauma Attending physician discretion

ACTIVATION EXPECTATIONS: LEVEL I: The Attending Trauma Surgeon is expected to be present in the trauma bay upon arrival of all patients meeting Level I Criteria, when advance notification is possible. If advance notification is not possible, they must be present within 15 minutes of Trauma Team activation. If unable because of other circumstances, the "Back-up Trauma Surgeon" is called by the Senior Trauma Resident and is expected to respond within 15 minutes

LEVEL II CRITERIA
The Trauma Team is expected to be in the trauma bay upon the patient's arrival. The Trauma Team assumes care of Level II trauma patients upon the team's arrival in the Trauma Room.

- External head or scalp injury with GCS greater than 10 but less than 14
- Altered mental status (GCS less than 14) with recent history of trauma
- Disoriented and combative patient, with external signs of trauma
- Significant facial trauma, without signs of airway compromise
- Geriatric (age: 70 years or older): co-morbid conditions with potential for additional morbidity
- Non-bleeding penetrating wound through the platysma, not meeting Level I Criteria
- Pneumothorax or hemothorax, without respiratory compromise
- Obvious multiple rib fractures, without respiratory compromise
- Non-bleeding penetrating wound, NOT meeting Level I Criteria
- Significant abdominal tenderness, NOT meeting Level I Criteria
- Seatbelt contusions on neck or abdomen
- Injuries above ***and*** below diaphragm (adult)
- Pelvic instability or significant pain on movement
- Blood at urinary meatus or gross hematuria
- Spinal cord paralysis or peripheral neurological deficit of extremity
- Amputation (partial/complete) proximal to the wrist or ankle

- Crushed or mangled extremity, without amputation
- Two or more long bone fractures
- One or more ***open*** long bone fractures
- Burns greater than 10% body surface area (adult and pediatric).
- Face or genitalia burns
- Any clinical signs of inhalation injury
- Any burn with associated history of trauma (fall, explosion)
- Combination of external signs of trauma and associated burns
- High voltage electrical burns
- Motor vehicle crash greater than 40 mph with one of the following:
    - Intrusion into the passenger compartment more than 12 inches
    - Ejection from the vehicle
    - Death at scene in same vehicle
    - Motorcycle crash greater than 20 mph or separation of rider from bike at any speed
- Any pedestrian vs. auto greater than 5 mph
- Any pedestrian thrown from or run over by an automobile
- Bicycle crashes (greater than 5 mph) or with significant impact from auto
- All falls 20 feet or more
- Falls from any height in ages less than **6** years or greater than **55** years with:
    - Evidence of head injury
    - Multiple rib fractures
    - Long bone fracture (excluding femoral neck/head)
    - Abdominal complaints
    - Impalement/puncture
- Fall from horse or kicked by horse
- All trauma patients transported by helicopter
- Two or more system injuries in pediatric patient
- Pregnant trauma patients with significant mechanism of injury
- Hypothermia (less than 32o C) patients
- Any drowning, with associated injury
- Assault patient, with loss of consciousness
- Intentional injury patient requiring more than simple suturing
- Patients with recent history of hanging
- Age greater than 55 years with significant mechanism of injury
- Any patient with significant mechanism of injury ***and*** significant co- morbid medical condition (cardiac, respiratory, IDDM, cirrhosis, morbid obesity, immunosuppression, bleeding disorders, use of anticoagulants)
- Emergency Medicine or Trauma Attending physician discretion
- Any patient who was initially stable, but deteriorates (upgrade to Level I criteria)

ACTIVATION EXPECTATIONS: LEVEL II: The Attending Trauma Surgeon and Team, are expected to meet the patient upon arrival in the Trauma Bay when there is advance notification or as soon as possible if no advance notification. If the Attending Trauma Surgeon cannot be present on arrival or immediately thereafter, the senior resident must make phone contact after the primary and secondary surveys are completed, assuming the patient remains stable. If the patient becomes unstable and the attending surgeon cannot be present, the “Back-Up Trauma Surgeon” is called to respond. Otherwise, the Trauma Attending sees the patient no more than three hours after arrival to review findings and plans with the senior resident.

LEVEL III CRITERIA: These patients are evaluated by at an outside facility and found to have an injury or mechanism which needs admission, disposition and/or follow up who otherwise do not meet Level 1 or Level II criteria. (see above). Upon notification, TrAC pages the team with prenotification of a Level III transfer.

- All intoxicated (alcohol or drug) patients with evidence of traumatic injury
- Patients with a recent history of traumatic event requiring hospital admission. Must have normal vital signs, GCS of 15 and not meet Level I or II Criteria.

- Patients initially accepted in transfer by Orthopedics, Plastics, or Neurosurgery for single system injury, but require a comprehensive evaluation by that service
- Awake and alert patient with no evidence of external injury, and involved in an MVC less than 40 MPH who have a traumatic injury
- Any pedestrian struck at less than 5 mph, awake and alert, ***and*** with evidence of traumatic injury
- Falls less than 20 feet with evidence of injury
- Patients with history of assault with evidence of injury
- "Found down" patients with evidence of traumatic injury
- Patients with significant co-morbid medical conditions and evidence of injury
- Any pediatric burn more than 5 %but less than 10% BSA, without involvement of face, genitalia and /or smoke inhalation, or with other injuries
- All pediatric falls more than 5 feet but less than 20 feet who have evidence of injury
- Geriatric (age 70 years or greater): ground level fall with GCS 15 and evidence of head/facial injury
- Child or elder abuse cases (suspected or actual) requiring hospital admission

ACTIVATION EXPECTATIONS: LEVEL III: Level III patients are seen as soon as possible by the senior trauma resident and members of the trauma team. Findings are reviewed and further studies are ordered as necessary. Communication with the Trauma Attending occurs as necessary. After all studies are completed and data reviewed the Attending Trauma Surgeon sees the patient and reviews the findings and plan. It is expected that a disposition is made within 90 minutes of completion of all studies and exams.

TRAUMA CONSULT
There are several types of Trauma Consults:

- Patients that are seen in the UMass Memorial University ED. If the patient is then assessed to require immediate Trauma presence the patient is moved to the Trauma Room and a Level 1/Level II Trauma Activation is then paged out from TrAC.
- Patients with a traumatic mechanism seen by the ED or who were previously seen by the Trauma Service who need to be evaluated again by Trauma: TrAC is called to page out "Trauma Consult" with patient location.

Appropriate patients for consultation:

- Stable primary survey
- ER evaluation complete, including all imaging, injuries identified, and input from Trauma required for treatment or disposition. Consults should not be used for general evaluation based on suspected injury prior to complete ER evaluation.
- Patients do not otherwise meet criteria for Level 1 or II activation

TRAUMA PATIENTS AT MEMORIAL CAMPUS
In the event that a trauma patient arrives at the Memorial Campus, appropriate Advanced Trauma Life Support© (ATLS) resuscitation measures should be undertaken while arranging for transfer to the University Campus. In this instance, there should be direct communication between the Memorial ER physician and the University Trauma Surgeon.

These patients are considered consults.

General Procedure

- The Trauma Program Manager, the Chief of Trauma and Surgical Critical Care and the Clinical Director of Emergency Medicine is responsible for disseminating and monitoring this policy.
- The Trauma Service Performance Improvement process is responsible for monitoring compliance with this policy.
- Any case that falls outside of adherence to this policy is reviewed by the Chief of Trauma and Surgical Critical Care.

- Any patient, who was initially stable but deteriorates, should be upgraded to a Level I or II patient, based on clinical assessment.
- Obtain relevant information from pre-hospital personnel to assure appropriate triage decisions are made as early as possible.
- It is the Trauma Chief Resident's responsibility to communicate to the Attending Trauma Surgeon regarding the patient's initial examination by paging the Attending to the trauma bay telephone or their cell phone for all Level II patients within 10minutes of the patient arrival, and immediately after the initial evaluation is complete(primary and secondary surveys). In addition, if a patient's condition deteriorates, it is the Trauma Chief Resident's responsibility to notify the Attending Trauma Surgeon via cell phone or pager. The Trauma Attending may then elect to call the "Back Up Trauma Surgeon" to act as his/her surrogate.
- When a probable isolated or single-system injury is being admitted to another surgical service, a request for a Trauma Service consultation can be made by the ER or admitting service to the on-call Trauma Senior Resident. The final disposition of the patient will be determined by the on-call Trauma Attending.

No changes to this policy may be made in isolation or independently.

Clinical/Department Specific Procedures

N/A

Supplemental Materials

For the Pregnant Trauma Patient: please see Policy 2240
For the Trauma Program Internal Transfer: please see Policy 2541

Rescission

Supersedes policy dated: 11/1/2018

References

N/A