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| Contact | Stephanie Spain: Trauma Program Manager |
| Area | Trauma Surgical Critical Care |
| Applicability | System Wide Policies |

# Trauma Alert Policy - Adult



## 1. Policy statement:

In order to provide an immediate systematic approach to the care of the critically injured adult trauma patient, we have developed a tiered trauma response based on the American College of Surgeons COT guidelines. This is done in an effort to match the resources of the Level 1 Trauma Center to the needs of the injured patient.

## 2. Who Should Read This Policy:

Trauma Services, Trauma Attending Physicians, Emergency Department Physicians, Emergency Department Nursing and Support Staff, Trauma Committee Members, Critical Care Nurse Clinician, Surgery House Staff, Operating Room, Anesthesiology, Radiology, Respiratory Therapy, Laboratory, Medical Affairs and Executive Management.

## 3. Purpose:

Purpose aligns with policy statement.

## 4. Definitions:

N/A

## 5. The Policy

I. **A Level One Trauma Alert** will be initiated by the Emergency Department Physician, Trauma Surgeon, Emergency Department Patient Flow Coordinator, or Emergency Department Clinical Staff Leader within 15 minutes prior to arrival of trauma patients who meet one or more of the following criteria; or who after arrival, are found to meet one or more of the following criteria

after examination by the Emergency Department Physician or Trauma Surgeon:

- GCS <9 with traumatic mechanism
- Confirmed Systolic BP <90 at any time in adults, and age-specific hypotension in children or
- Intubated patients arriving from the scene of trauma, **OR**
- Patients who have respiratory compromise **or** are in need of an emergent airway as follows:
    - Patients who have oxygen saturation < 90% on supplemental oxygen, rescue airway, or cricothyrotomy
    - Includes intubated patients who are transferred from another facility with ongoing respiratory compromise (Does not include patients intubated at another facility who are now stable from a respiratory standpoint)
- New onset Quadriplegia from trauma mechanism
- Any patient receiving blood transfusion or ongoing volume resuscitation to maintain vital signs (Transfer patients from another hospital who require ongoing blood transfusion)
- Gunshot wounds to the head, neck, chest, or abdomen
- Emergency physician's discretion



**Level One Trauma Activation Alert Notification/Trauma Team Response:**

***The following personnel will be alerted and are required to respond:**

- Trauma Attending: Ultimate responsibility for initial evaluation and management
- Designated Trauma Chief or Senior Resident (PGY 4 or above): Lead pre-brief, ask EMS for report on arrival, assist log rolling patient, assure FAST exam completed and call out results, verify additional orders with EM resident, transport patient to CT/OR/IR if needed.
- Designated Trauma Junior Resident: Secondary assessment, check bilateral fem/radial pulses, assess back of head, c-spine, back, rectal exam, chest, upper and lower extremities, abdomen, pelvis, groin, and perineal assessment.
- Emergency Department Attending Physician: Airway management
- Emergency Department Resident: Hold c-spine, count/control move from EMS stretcher, call out airway, breathing assessment. Assess head, midface, ears, oral nose, eyes, pupil assessment, and GCS. Cascade level 1 orders, adn any additional orders requested by the trauma chief.
- Critical Care Nurse Clinician: "All quiet", call out access, obtain manual BP, cut off clothes, check radial pulse on BP cuff side, if meds are given call out meds/dosages, package patient for CT.
- Emergency Department Technician: Place patient on monitor, bag clothes/belongings, label and walk blood samples to the lab.

- Emergency Radiology Technician: Complete chest x-rays and pelvis films if necessary.
- Respiratory Therapist: Connect patient to ventilator, draw and run ABG.
- Obstetrician-Gynecologist with any pregnancy greater than or equal to 20 weeks' gestation
- Maternal Fetal Medicine (MFM)/OB/GYN with unstable pregnant patient

***The following personnel will be alerted and may respond**:

- Guest Representative and/or Chaplain
- Blood Bank
- Operating Room
- Anesthesia
- Security

**Documentation, Labs, and Radiology**:

- The History and Physical form will be completed in Epic by the trauma team.
- The Trauma Narrator in the Epic will be completed including Q5 minute vital signs until disposition is decided.
    - Once disposition is determined patient can be changed to ICU vital signs or floor vital signs
    - ICU vital signs: every 15 minutes' x 4, then every 30 minutes x2, and then every hour, unless starting/titrating vasopressors or patient becomes unstable. If this occurs vital signs should be every 5-15 minutes.
    - Floor vital signs: Every 4 hours
- A level One Trauma Panel will be collected to include:
    - ISTAT EG7+ and ISTAT Chem8+
    - Fibrinogen
    - PT/PTT
    - Platelet Count
    - TEG (with platelet mapping if known intracranial hemorrhage)
    - Type and Screen
    - Serum Pregnancy test on all females of childbearing age
- Radiology test will include:
    - Portable Chest X-Ray
        - AP Pelvis on al blunt level I with mechanism if clinically indicated

        - Straight cath before xray if contrast already present
    - CT Head, Cervical Spine, Thorax, Abdomen, and Pelvis as needed
    - CTA per Blunt Cerebrovascular Injury PMG
    - Others as ordered
- Other tests will include:
    - Electrocardiogram
    - FAST exam (unless deferred by physician)
    - Others as needed

II. **A Level Two Trauma Alert** will be initiated by the Emergency Department physician, Trauma Surgeon, Emergency Department Patient Flow Coordinator, or Emergency Department Clinical Staff Leader within 15 minutes prior to arrival of trauma patients who do not meet the Level One Trauma Alert criteria but do meet one or more of the following criteria; or who after arrival are found to meet one or more of the following criteria after examination by the Emergency Department Physician or Trauma Surgeon:

- Stab wound to the head, neck, chest, or torso
- GSW proximal to the elbow or knee
- HR>130 **SUSTAINED**
- New onset hemiplegia or paraplegia from trauma mechanism
- Two or more **proximal** long bone fractures (Humerus/Femur)
- Signs of significant blunt torso trauma including, but not limited to:
    - Absent breath sounds, chest wall instability, or deformity
        - Suspected hemothorax/pneumothorax requiring pre-hospital chest decompression (Does not include stable facility transfers with chest tube in place)
- GCS 9-13 with mechanism attributed to trauma
- Crushed, degloved, mangled, amputated, or pulseless extremity **proximal** to the elbow or ankles
- Pregnancy >20 weeks with injury or significant MOI
- Hemodynamically stable intubated patients that are transferred from another facility

**Level Two Trauma Activation Alert Notification/Trauma Team Response:**

***The following personnel will be alerted and are required to respond:**

- Trauma Attending (Not required for initial response but are available in-house)
- Designated Trauma Chief or Senior Resident (PGY 4 or above)
- Designated Trauma Junior Resident
- Emergency Department Physician

- Critical Care Nurse Clinician
- Emergency Department Technician
- Emergency Radiology
- Respiratory Therapist
- Obstetrics and gynecology with any pregnant patient greater than or equal to 20 weeks gestation (Mandatory Response)
- Maternal Fetal Medicine (MFM) with unstable pregnant patient (Mandatory Response)
- Guest Representative and/or Chaplain
- Registration

***The following personnel will be alerted and may respond**:

- Blood Bank
- Operating Room
- Anesthesia
- Security
- Guest Representative and/or Chaplain
- Registration



**Documentation, Labs, and Radiology**:

- The History and Physical form will be completed in Epic
- The Trauma Narrator in Epic will be completed including Q5 minute vital signs until disposition is decided.
    - Once disposition is determined patient can be changed to ICU vital signs or floor vital signs
    - ICU vital signs: every 15 minutes' x 4, then every 30 minutes x2, and then every hour, unless starting/titrating vasopressors or patient becomes unstable. If this occurs, vital signs should be every 5-15 minutes.
    - Floor vital signs: every 4 hours
- A level Two Trauma Panel will be collected to include:
    - ISTAT EG7+ and ISTATChem8+
    - PT/PTT
    - Platelet Count
    - Type and Screen
    - Serum Pregnancy test on all females of childbearing age
- Radiology test will include:

        - Portable Chest X-Ray
            - AP Pelvis on all blunt level II with mechanism if clinically indicated
                - Straight cath before xray if contrast already present
        - CT Head, Cervical Spine, Thorax, Abdomen, and Pelvis as needed
        - CTA per the Blunt Cerebrovascular Injury PMG
        - Others as ordered
    - Other tests will include:
        - Electrocardiogram
        - FAST exam (unless deferred by physician)
        - Others as needed

    *Orders for level II activations to be placed by Emergency Department Physician

III. **A Level Three Trauma Alert** will be initiated by the Emergency Department Physician, Emergency Department Patient Flow Coordinator, or Emergency Department Clinical Staff Leader within 15 minutes prior to arrival of trauma patients who do not meet the Level One or Two Trauma Alert criteria but do meet one or more of the following criteria; or who after arrival are found to meet one or more of the following criteria after examination by the Emergency Department Physician:



- Fall from any height on anticoagulant medication **with** signs of head trauma
- Fall > than 20 feet **with** obvious signs of trauma
- Trauma with altered mental status:
    - Amnesic to events
    - GCS 14
    - Positive LOC
- Questionable chest and/or abdominal injury from trauma
- Diminished pulses in an extremity with signs of trauma
- Auto vs. Pedestrian/Bicyclist thrown, run over, or with significant (>20 MPH) impact
- MVC with ejection
- Transfers not meeting Level 1 or 2 activation criteria
- Trauma in the Elderly Population (age >60 years) **with** one or both of the following:
    - SBP <110 (may represent shock after age 65)
    - Patients with significant cardio or respiratory comorbidities

Level Three Trauma Alert Activation/ Trauma Team Response- the following personnel will be alerted to respond to the patient's bedside for evaluation and treatment immediately upon

patient's arrival. The Emergency Department Physician should be at the bedside no more than 30 minutes after the patient's arrival:

- Emergency Department Physician
- Critical Care Nurse Clinician as a facilitator of care when available for initial evaluation
- Emergency Department Technician
- Emergency Radiology

**Documentation, Labs, and Radiology:**

- The History and Physical will be documented in Epic, a documented consult will be completed as appropriate along with standard Emergency Department documentation.
- The Trauma Narrator in Epic will be completed including Vital signs every 5 minutes' x 30 minutes then every 30 minutes until disposition is decided.
    - Once disposition is determined patient can be changed to ICU vital signs or floor vital signs
    - ICU vital signs: every 15 minutes' x 4, then every 30 minutes x2, and then every hour, unless starting/titrating vasopressors or patient becomes unstable. If this occurs, vital signs should be every 5-15 minutes.
    - Floor vital signs: every 4 hours
- A level Three Trauma Panel will be collected to include:
    - ISTAT EG7+ and ISTAT Chem8+
    - PT/PTT
    - Platelet Count
    - Type and Screen
    - Serum Pregnancy test on all females of childbearing age
- Radiology test will include:
    - Portable Chest X-Ray
    - Others as ordered
    - Computerized Tomography Head, Neck, Thorax, Abdomen, and Pelvis as needed
    - CTA per the Blunt Cerebrovascular Injury PMG
    - Others as ordered
- Other tests will include:
    - Electrocardiogram
    - FAST exam can be considered. (Level three trauma activations with a positive FAST should be upgraded to level two statuses due to the

possible need for immediate surgical intervention.)

- Others as needed

****The Trauma Attending or Emergency Room Attending Physician may activate/downgrade/upgrade at their discretion**

****If the Critical Care Nurse Clinician (Red Shirt) feels a patient should be upgraded based on criteria, they will call the Trauma Attending or Trauma Chief.**

****All pregnant patients greater than or equal to 24 weeks' gestation with trauma mechanism should receive OB consult and fetal monitoring**

**** For patients on anticoagulants with suspected head injury; CT of the head should be obtained immediately. Time to CT should not exceed 30 minutes from the patient's arrival to the Emergency Department**

****Any traumatic burns should follow activation criteria listed above**

IV. **Trauma Evaluation/Consult** will be obtained on patients who do not meet any Trauma Alert criteria, but who after initial physician evaluation have injuries which require Trauma Service admission or further evaluation by a trauma surgeon. Trauma evaluation can occur anywhere in the hospital.



**The Emergency Department Physician will call the Trauma Chief, who will respond to the Emergency Department or designate someone to respond, to evaluate the patient within 1 hour.

**If the patient deteriorates after arrival to the Emergency Department, the status may be changed at any time.

**Trauma Evaluation / Consult Response**:

- Trauma Attending (not required for initial response)
- Designated Trauma Chief or Resident (PGY 4 or above)
- Additional support personnel and/or Critical Care Nurse Clinician optional – by request of Trauma Chief/Resident

**Documentation, Labs, and Radiology**:

- The History and Physical will be documented in the Epic, a documented consult will be completed as appropriate along with standard Emergency Department documentation.
- A Trauma Panel will be collected to include:
  - I-stat EG7+ and Chem8+
  - PT/PTT

        - Platelet Count
- Urine Pregnancy test on all females of childbearing age
    - Radiology test will include:
        - Portable Chest X-Ray
        - CT Head, Cervical Spine, Thorax, Abdomen, and Pelvis as needed
    - Other tests will include:
        - Electrocardiogram as needed
        - Others as ordered

**Notification:**
In the event the pre-hospital information or initial examination (for cases that arrive without prior notification) indicates a need for a Trauma Alert, the Emergency Department Physician should initiate the appropriate Trauma Team Activation.

To alert personnel for a Level one or Level two trauma activation the Emergency Department will page via wireless office for Trauma BEH. To alert personnel for Level 3 trauma activation, the Emergency Department will page via wireless office for Trauma-Level 3. Regardless of any level, the following information will be given in the page:

- Level of Trauma Activation:
    - Level of Trauma Activation: (Level 1, Level 2, or Level 3)
- Mechanism of Injury – (MVC, Fall, GSW, etc.; If penetrating state location of injury)
- Age
- Sex
- Vital Signs – Stable or Unstable
- Intubated – Yes/No
- Estimated time of Arrival (ETA) in minutes (now if patient is in ED)
- Mode of Arrival – Air/Ground
- Emergency Department room number

**The notification process will be as follows**:

- Emergency Department Patient Flow Coordinator or Clinical Staff Leader notifies:
    - Activates Trauma Pager
    - Emergency Department Physician
    - Emergency Department Nurse
    - Emergency Department Clerk
    - Emergency Department Patient Representative

        - Emergency Department Care Technicians
- Trauma Service Chief Resident Notifies:
    - Operating Room (if applicable)
    - Appropriate Sub-Specialists (if applicable)

# References:

https://www.facs.org/quality-programs/trauma/vrc/resources. Resources for Optimal care of the Injured Patient: 2014.

## Approval Signatures

| Step Description | Approver | Date |
|---|---|---|
| COO | Robert Maloney: Executive VP & Chief Operating Officer | 08/2023 |
| Medical Executive Committee | Alisa Bolt: Medical Affairs | 08/2023 |
| Trauma Services Committee Approval | Stephanie Spain: Trauma Program Manager | 06/2023 |
| | Stephanie Spain: Trauma Program Manager | 06/2023 |