



**TITLE:**

**Adult Trauma Activation Policy and Procedure**

**EFFECTIVE DATE:**

**November 15, 2019**

**POLICY NO:**

**01RT34**

**DISTRIBUTION:**

**Emergency Department, Intensive Care Unit**

**REGULATORY  
STANDARD:**

**REPLACES NO:**

**FORMULATED BY:**

**Clinical Director of Critical Care Services**

**APPROVED BY:**

**ED Medical Director**

**REVIEW DATE:**

**07/90 PRD 01/02, 11/19**

**REVISION DATE:**

**06/01/89 PRD 08/05/91, 11/19**

**I. Purpose:**

- a. A team must be rapidly assembled to provide for the initial evaluation and resuscitation of trauma patients in an organized and efficient manner. In order to provide the highest quality care to trauma patients.

**II. Policy:**

- a. The trauma team will consist of a multi-disciplinary panel of professionals assembled in an organized fashion to perform the tasks necessary to efficiently resuscitate seriously injured trauma patients. In the event that a critically injured adult trauma patient presents to the Emergency Department for resuscitation and stabilization, the trauma team will be activated. The decision to call for "Trauma RED Activation" versus "Trauma YELLOW Alert" will be a joint decision between the Emergency Department physician, Emergency Department nursing staff and the recommendation from pre-hospital professionals. All appointed trauma team members notified must report to the Emergency Department immediately with a "Trauma YELLOW Alert" and on-call staff within 30-minutes of "Trauma RED Activation."

Trauma team activation is a two-tiered system based upon physiologic parameters and anatomic injury. Trauma practice guidelines are used to coordinate effective trauma care. Trauma cases will be reviewed in PIPS according to these guidelines.

**III. Procedure:**

- a. Upon notification by EMS personnel that an incoming trauma patient meets the specific criteria outlined in this protocol, the appropriate level response will be called by the Emergency Physician or Emergency Department RN. The

Emergency Department Head-Unit Clerk will page out a "Trauma YELLOW Alert" or a "Trauma RED Activation" to the trauma team paging group.

**b. The "Trauma RED Activation" criteria are as follows:**

- i. Altered LOC: GCS < 9
- ii. Respiratory Distress/Airway Compromise or Intubation
  - 1. Adult Respiratory Rate < 10 or > 30
  - 2. Child

AGE	RR
<6	<10 or >30
2-5	<10 or >40
12-24 Months	<10 or >50
0-12 Months	<10 or >60

- iii. Shock/Diminished Perfusion
  - 1. Adult Systolic Blood Pressure < 90; Heart Rate >120
  - 2. Child

AGE	BP	HR
<6	<90	<60 or >120
2-5	<80	<60 or >180
12-24 Months	<75	<70 or >180
0-12 Months	<70	<80 or >180

- iv. Traumatic Arrest
- v. Traumatic Paralysis
- vi. Severe multiple injuries (two or more systems) or severe single system injury
- vii. Cardiac or major vessel injury
- viii. Traumatic penetrating wound to the neck, chest or abdomen
- ix. Unstable pelvic fracture
- x. Severe facial injuries
- xi. Emergency Medicine physician discretion

**c. The "Trauma YELLOW Alert" criteria are as follows:**

- i. GCS >8 and < 14
- ii. Traumatic blunt injury to the head, chest or abdomen
- iii. Isolated penetrating injuries to the extremities
- iv. Significant orthopedic injuries
  - 1. Suspected fracture of 3 or more ribs or 1<sup>st</sup> and 2<sup>nd</sup> ribs
  - 2. Significant fractures involving 2 or more long bones
- v. MVC with significant vehicular body damage or intrusion
- vi. Death of occupant in the same vehicle
- vii. Falls > 20 feet
- viii. Pregnancy > 20 weeks
- ix. Consider co-morbidities:
  - 1. Age > 55 or < 5 years
  - 2. Cardiac or respiratory disease

- 3. Morbid Obesity
- 4. Coagulopathies
- 5. Chemical intoxication
- 6. Hypothermia
- x. ED physician discretion

**d. For each level of Trauma (RED or YELLOW), the trauma team members are:**

**i. "Trauma YELLOW Alert"**

- 1. Emergency Department Physician
- 2. Two Emergency Department Nurses
- 3. Emergency Department Head-Unit Clerk (during shift)
- 4. MOD/Clinical Nursing Supervisor
- 5. Radiology Technician
- 6. Laboratory Technician
- 7. Respiratory Therapist
- 8. Security

**ii. "Trauma RED Activation" – includes all members listed on Trauma YELLOW Alert" plus the following members to arrive within 30-minutes of activation:**

- 1. On-Call General Surgeon
- 2. On-Call CRNA
- 3. On-Call Operating Room Staff

**iii. Call Specifically On-Call Orthopedic Surgeon for primary orthopedic injury.**

The individual roles of the team members are subject to change based on the needs of the patient and resources available during the resuscitation. Below is a guideline. The emergency department physician leading the resuscitation may modify the duties of any team member if in the best interest of the patient.

**e. Emergency Physician and General Surgeon**

- i. Perform ATLS primary and secondary survey
- ii. Perform or delegate airway management
- iii. Perform procedures as needed such as chest tube insertion, central venous access, ultrasound examination.
- iv. Order appropriate laboratory studies and radiographic images
- v. Responsible for all medications and fluids given
- vi. Make triage and transfer decisions
- vii. Determine mode of inter-facility transfer (Air versus Ground)
- viii. Communicate directly with receiving physician at trauma hospital regarding transfer.
- ix. Document case (dictate emergency department note)
- x. Complete and sign transfer form
- xi. Coordinate priorities when more than one critical patient in the emergency department

**f. Emergency Department Nurses**

- i. Prepare trauma room before patient arrival
- ii. Prepare trauma hospital gurney for x-rays

- iii. Assist EMS with transfer from EMS gurney to trauma bed
- iv. Attach BP, cardiac, and oximetry monitors to the patient
- v. Obtain initial vital signs and report out loud to emergency department physician and trauma team the BP, HR, RR, SpO2 and temperature (core temperature if hypothermia is considered)
- vi. Maintain and monitor all intravenous lines. Obtain fluid resuscitation orders and IV rate from emergency department physician. Report to recorder or personally document total IV intake and urine output at end of emergency department course.
- vii. Set-up fluid and blood warmer. Start blood transfusion as ordered.
- viii. Remain at patient's bedside throughout the emergency department course.
- ix. Remove patient's clothing.
- x. Draw up and label airway drugs (Succinylcholine, Etomidate, etc). Be prepared to administer drugs as ordered by the emergency department physician.
- xi. Obtain IV access if needed. (If primary IV is completed pre-hospital, place second IV and draw blood)
- xii. Insert Foley catheter when authorized by the emergency department physician
- xiii. Set-up chest tube drainage system if needed.
- xiv. Assist physician with procedures as needed.
- xv. Administer tetanus booster and antibiotics when ordered by emergency medicine physician.
- xvi. Initially document emergency department course by filling out trauma resuscitation record.
- xvii. Record vital signs initially and every five minutes; make sure the emergency medicine physician leader is aware of any significant change in the patient's status.
- xviii. Accompany patient out of the department for any diagnostic procedures.
- xix. Accompany patient to ICU, report to ICU staff.

**g. Nursing Supervisor**

- i. Assess staffing needs; delegate additional nursing staff as required to attend trauma patient or others in the emergency department
- ii. Ensure all team members are wearing appropriate protective equipment
- iii. Monitor activities of the trauma team – assist when necessary
- iv. Control traffic in the trauma room; attentive to patient's privacy (e.g. keep curtains closed, keep other patients and family members away from traffic areas)
- v. Assist others with equipment and procedures as needed
- vi. Communicate with family in collaboration with any available family support staff member if available
- vii. Escort family members to trauma room and attend them when appropriate.
- viii. Ensure patient's belongings are placed into labeled bags as soon as possible.

**h. Respiratory Therapist**

- i. Check airway equipment before patient arrival (e.g. suction, laryngoscopes, Ambu-bag, Oxygen)
- ii. Maintain oxygen; ensure SpO2 unit functions properly; assist ventilation with BVM as necessary and as directed by the emergency department physician.
- iii. Assist with intubation; help ensure the in-line cervical spine immobilization is delegated for intubation.
- iv. Check tube placement after intubation with esophageal detector device, attach end-tidal CO2 monitor and secure ET-tube.
- v. Ventilate patient; set-up transport ventilator if necessary.
- vi. Monitor end-tidal CO2 and SpO2
- vii. Draw ABGs if requested

**i. Anesthesia (CRNA)**

- i. Initially assist with airway management as directed by lead emergency medicine physician.
- ii. Assist with vascular access (peripheral or central)
- iii. Assist with ventilation if respiratory therapy not available
- iv. Serve as team leader for an individual patient when emergency department physician is unavailable.
- v. Place NG or OG tube as directed by the emergency department physician

**j. Laboratory Technician**

- i. Obtain pre-labeled blood tubes from trauma room; attach ID bracelet to patient
- ii. Obtain syringes from IV start (by RN) or perform venipuncture to obtain blood for trauma battery.
- iii. Determine availability of blood for transfusion; bring O-negative blood to trauma room immediately if requested.
- iv. Obtain urine from Foley insertion and run UA on all patients. Run urine HCG on all females in reproductive age group.
- v. Run ABGs
- vi. Ensure type-specific blood is available in blood bank.

**k. Radiologic Technician**

- i. Transfer portable x-ray machine to trauma room, ensure enough film plates for basic trauma radiographs (e.g. lateral c-spine, chest, and pelvis).
- ii. Place chest plate on trauma cart under backboard before patient arrives.
- iii. Obtain radiographic priorities from emergency physician
- iv. Ensure at least two additional aprons are in trauma room and available for emergency department staff.
- v. Develop films immediately and notify the ED physician when the post to PACS
- vi. Inquire if CT will be needed; warm up CT prior to trauma arrival.

**l. Emergency Department Health Unit Coordinator (HUC)**

- i. Activate trauma team upon direction of ED staff. Confirm all team members have arrived and record arrival times.

- ii. Determine if additional medical staff will be needed.
- iii. Contact receiving trauma hospital as directed by emergency department physician. Assemble and copy all documentation for transport team (e.g., trauma flow sheet, ED physician chart, laboratory studies, radiology images)
- iv. Direct family members to family waiting room or to Nursing Supervisor
- v. Prepare patient transfer forms and obtain emergency department physician signature if patient is transferred.

**m. Security**

- i. Assist with procedures during resuscitation as directed by the ED physician
- ii. Secure helicopter landing pad and assist flight crew with equipment
- iii. Assist with transportation of the patient to CT or helipad as needed.

**IV. LRH Trauma Guiding Principles**

- a. Personal Protective Equipment (PPE) should be worn by all personnel who work directly with the patient.
  - i. Gowns
  - ii. Gloves
  - iii. Masks to include eye shields
  - iv. Shoe covers
  - v. Surgical Caps
  - vi. Lead Aprons
- b. Transfers should not be delayed to perform laboratory studies. Trauma lab panels, if necessary, should only be performed if they are going to be acted upon during LRH resuscitation. Lab studies might include:
  - i. Heme Profile
  - ii. PT/INR
  - iii. PTT
  - iv. BMP
  - v. Alcohol
  - vi. Type and Screen
  - vii. ABG
  - viii. Pregnancy Test
  - ix. UA
  - x. Urine Toxicology Screen
- c. Keep talking and noise to a minimum. Discuss the patient's condition only behind closed doors and after ensuring a private environment.
- d. Keep doors and curtains closed. Vigilantly maintain patient's privacy. Encourage other patient's and family members to stay in their examination rooms during the resuscitation.
- e. Ensure that the patient is informed of procedures before they are performed. Continuously ascertain the patient's comfort level (e.g., pain, temperature, position, etc.)
- f. Verbally acknowledge orders (challenge and response); inform the source when the request has been completed
- g. Stand in an area removed from the patient until called upon or dismissed, if not directly involved in patient care.

- h.** Select proximal sites for peripheral IV access, when possible; they may need to be converted to rapid infusion catheters.
- i.** Vacate the room when x-rays are being taken unless fitted with a lead apron.
- j.** Place the patient's clothing and belongings into labeled bags as soon as possible.



## EMS LRH TRAUMA GUIDELINES

**\*\*All below criteria at ED Physician's Discretion\*\***

Trauma Yellow	Trauma Red
<ul style="list-style-type: none"> <li>. GCS 9-12</li> <li>. MVC → semi-stable</li> <li>. Blunt Injury to Head, Abdomen, Chest</li> <li>. Penetrating &amp; crush injuries: isolated and to extremities</li> <li>. Traumatic fall</li> <li>. Ortho Injury → semi-stable</li> <li>. Assault</li> <li>. Hypothermia &amp; Hyperthermia</li> <li>. Drowning/Asphyxia</li> <li>. Age &gt;55 on blood thinners with traumatic injury</li> <li>. Burns                         <ul style="list-style-type: none"> <li>. 10-20% TBSA in children</li> <li>. 15-20% TBSA in adults</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>. GCS &lt;9</li> <li>. Shock (SBP &lt;90 or HR &gt;120)</li> <li>. Respiratory Distress / Airway Compromise</li> <li>. Cardiac Arrest or Major Vessel Injury</li> <li>. MVC → unstable</li> <li>. Penetrating Wound to Head, Neck, Chest, Abdomen, Groin</li> <li>. Crushed, Pulseless, or Amputation of extremity</li> <li>. GSW proximal to elbow/knee</li> <li>. Ortho injury → unstable</li> <li>. Burns                         <ul style="list-style-type: none"> <li>. Compromised ABC</li> <li>. &gt;20% TBSA second degree burns</li> <li>. Third degree burns</li> </ul> </li> </ul>

### **Special Considerations:**

<ul style="list-style-type: none"> <li>- Pregnancy &gt;20 weeks</li> <li>- Age &gt;55</li> <li>- Blood Thinners</li> <li>- Hypothermia</li> </ul>	<ul style="list-style-type: none"> <li>- Cardiac Disease</li> <li>- Respiratory Disease</li> <li>- Chemical Intoxication</li> <li>- Morbid Obesity</li> </ul>
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# LRH TRAUMA GUIDELINES

**\*\*All below criteria at ED Physician's Discretion\*\***

Trauma Yellow	Trauma Red
<ul style="list-style-type: none"> <li>GCS 9-12</li> <li>MVC, OHRV, Agricultural, Industrial, Bicycle, Skiing / Snowboarding accident</li> <li>Occurred &lt;24h ago</li> <li>High rate of speed</li> <li>Ejection, Rollover, Unrestrained</li> <li>Blunt Injury to Head, Abdomen, Chest</li> <li>Penetrating injuries: isolated and to extremities</li> <li>Fall (&gt;20 feet or 2 Flights of Stairs)</li> <li>Crush Injury</li> <li>Ortho Injury</li> <li>3+ Rib Fractures (or 1st and 2nd ribs)</li> <li>Long Bone Fractures</li> <li>Assault</li> <li>Hypothermia &amp; Hyperthermia</li> <li>Drowning</li> <li>Asphyxia (hanging and/or compression)</li> <li>Age &gt;55 on blood thinners with traumatic injury</li> <li>Burns</li> <li>10-20% TBSA in pediatrics</li> <li>15-20% TBSA in adults</li> <li>Elderly or infant patients</li> <li>Special regions: face, hands, feet, perineum</li> </ul>	<ul style="list-style-type: none"> <li>GCS &lt;9</li> <li>Shock → SBP &lt;90 or HR &gt;120</li> <li>Respiratory Distress / Airway Compromise</li> <li>Need for Airway Placement</li> <li>RR &lt;10 or &gt;30</li> <li>Chest Wall Instability / Deformity</li> <li>Cardiac Arrest r/t Traumatic Event</li> <li>Cardiac or Major Vessel Injury</li> <li>MVC, OHRV, Agricultural, Industrial, Bicycle, Skiing / Snowboarding accident</li> <li>Penetrating Wound to Head, Neck, Chest, Abdomen, Groin</li> <li>Crushed, Degloved, Pulseless, or Amputation of Extremity Proximal to Wrist/Ankle</li> <li>GSW Proximal to Elbow/Knee</li> <li>Ortho injury</li> <li>Unstable Pelvic Fracture</li> <li>Open/Depressed Skull Fracture</li> <li>2+ Proximal Long Bone Fractures</li> <li>Severe Facial Injuries</li> <li>Burns</li> <li>Compromised ABC</li> <li>&gt;20% TBSA second degree burns</li> <li>Third degree burns</li> <li>Inhalation injury/chemical burns</li> </ul>

## Special Considerations:

- Pregnancy >20 weeks
- Age >55
- Blood Thinners
- Hypothermia

- Cardiac Disease
- Respiratory Disease
- Chemical Intoxication
- Morbid Obesity



# EMS - TRAUMA - PEDIATRIC

## Activation

- GCS <9
- Respiratory Distress/Airway Compromise or Intubation

<u>Age</u>	<u>RR</u>
<6 years	<10 or >30
2-5 years	<10 or >40
12-24 months	<10 or >50
0-12 months	<10 or >60

- Shock

<u>Age</u>	<u>BP</u>	<u>HR</u>
<6 years	<90	<60 or >120
2-5 years	<80	<60 or >180
12-24 mo	<75	<70 or >180
0-12 mo	<70	<80 or >180

- Injury
  - Traumatic Arrest
  - Traumatic Paralysis
  - Severe Multiple Injuries
    - 2+ Systems
  - Cardiac or Major Vessel Injury
  - Penetrating Wound to Neck, Chest, or Abdomen
  - Unstable Pelvic Fx
  - Severe Facial Injuries
  - ED Physician Discretion

## Alert

- GCS <9
- Blunt Injury to the Head, Chest, or Abdomen
- Isolated Penetrating Injuries to the Extremities
- Significant Ortho Injuries
  - 3+ Rib Fx
    - Or 1st or 2nd Ribs
  - Fxs Involving 2+ Long Bones
- MCV
  - Significant Vehicular Body Damage or Intrusion
  - Death of Occupant in the Same Vehicle
- Falls
  - Age 8-adult >20 Feet
  - Age 7 or less >age in years plus 3 feet

LRH MEDICAL CONTROL: 603-444-7480

# EMS - TRAUMA - PEDIATRIC

## Pediatric Glasgow Coma Scale

Behavior	Response	Score
• Eye Opening Response	-Spontaneously -To Sound -To Pain -None	<input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
• Best Verbal Response	-Age-appropriate Vocalization/Interaction -Cries Spontaneously -Cries to Pain -Moans to Pain -None	<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1
• Best Motor Response	-Spontaneous Movements -Localizes Pain -Withdraws to Pain -Decorticate Posture -Decerebrate Posture -None	<input type="checkbox"/> 6 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1

Total Score: \_\_\_\_\_