Purpose: The earlier a receiving emergency department is notified of an incoming critical patient, the better they are able to mobilize and prepare appropriate resources for the patient. Time to definitive care is a critical factor in the morbidity and mortality of trauma patients, and early notification results in improved patient care.

Policy: The team is a multi-disciplinary panel of professionals assembled in an organized fashion to perform the tasks necessary to efficiently resuscitate seriously injured patients. For patients who present within 24 hours of injury and meet any of the following criteria due to a traumatic mechanism, a trauma activation will be called. Adjustments to a patient’s trauma level may be made following completion of the primary and secondary survey.

**LEVEL 1 Activation Criteria:**

**Airway and Breathing**
- Intubated patients
- Grunting or stridor in a child
- Respiratory distress/flail chest
- Threatened or compromised airway
- Hypoxia (oxygen saturation less than 93%) with signs of respiratory distress
- Respiratory rate:
  - Age 6 to adult............below 10 or above 30
  - Age 2-5 years............below 10 or above 40
  - 12 to 24 months...........below 16 or above 50
  - 0 to 12 months..........below 20 or above 60

**Evidence of hemorrhagic shock indicated by:**
- Systolic blood pressure $\leq 90$ mm Hg *at any time* (or age specific hypotension in pediatrics).

<table>
<thead>
<tr>
<th>Age Specific Hypotension</th>
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<tbody>
<tr>
<td><strong>Age</strong></td>
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<tr>
<td>2-10 yr</td>
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<tr>
<td>$\leq 1$ yr</td>
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• Persistent heart rate >120 (or age specific tachycardia in pediatrics)

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<tr>
<th>Age</th>
<th>HR</th>
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<tr>
<td>2-5 yr.</td>
<td>&gt;160</td>
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<td>&lt; 2yr.</td>
<td>&gt;180</td>
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• Shock index > 1 in adults (HR>SBP)
• Positive abdominal or cardiac FAST exam
• Provider impression of hypoperfusion (consider absent distal pulses, agitation, anxiety, confusion, delayed capillary refill, diaphoresis, pallor, tachypnea)

Disability
• Glasgow Coma Scale ≤8 attributed to a traumatic mechanism
• Open or depressed skull fracture
• Paralysis or focal neurologic deficit

Mechanism of Injury
• Burns with concomitant trauma
  High voltage injury (including lightening)
• Penetrating injury to head, neck or torso
  proximal to elbow or knee
  Gunshot wounds
  Stabbing
• Blast/explosion injury with or without burns

Other
• Arterial tourniquet applied
• Pregnancy > 20 weeks with vaginal bleeding or contractions
• Unstable pelvic fracture
• Bilateral femur fractures
• Pulseless extremity or threatened limb
• Traumatic cardiac arrest
• Traumatic amputation/mangled limb

LEVEL 2 Activation Criteria:
Trauma patient presenting with GCS >8 but < 14 secondary to trauma
Injuries found
• Open fractures
• 2 or more proximal long bone fractures
  ( bilateral femur fractures equal a Level I activation)

Mechanism of Injury
• Ejection from vehicle
• Pedestrian/bicyclist struck by motor vehicle
• Death in same passenger compartment
• Major auto deformity, intrusion into passenger compartment,
TRAUMA ALERT: TEAM ACTIVATION PROTOCOL
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- Falls greater than 15 feet
- Pediatric falls greater than 10 feet or 2-3 times the height
- Smoke or chemical inhalation with criteria suggesting respiratory injury, i.e. closed space fires, carbonaceous sputum, central facial burns.
- Hanging/suffocation

The general surgeon must respond and evaluate the patient within one hour of discovering any of the following conditions resulting from trauma unless the patient has been transferred:

- Serum lactate > 5.0 mmol/L
- Solid organ injury
- Fluid in the abdomen
- Cardiac or major vessel injury

**Mandatory Surgeon Admit or Consult**

<table>
<thead>
<tr>
<th>Condition</th>
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<tbody>
<tr>
<td>Hemothorax or Pneumothorax</td>
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<tr>
<td>Pelvic fracture</td>
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<tr>
<td>Two or more adjacent rib fractures</td>
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<tr>
<td>Pulmonary contusion</td>
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</tbody>
</table>

**Significant fall:**

- > 15 feet
- > 65 years old and fall from elevation or down stairs
- Pediatric (<10 years old): > 2X patient’s height

ANY trauma patient requiring hospitalization for injury will be admitted by or obtain consultation by the on call trauma surgeon within 18 hours of admission.

**For Level 1 Activation, trauma team members are:**

- **Emergency physician** (must be present within 15 minutes of patient’s arrival)
- **General surgeon** (must be present within 30 minutes of patient’s arrival)
- **Pediatrician** (present within 15 minutes of pediatric patient’s arrival) if patient is less than 18 years old
- **Two emergency department RNs**
- **One ICU RN**
- **One Med/Surg RN**
- **Patient Care Supervisor**
- **Respiratory therapist**
- **Anesthesia**
- **Laboratory technician**
- **Radiology technician**
For Level 2 Activation, trauma team members are:
1. Emergency physician (present within 15 minutes of patient’s arrival)
2. Two emergency department RNs
3. One ICU RN
4. One Med/Surg RN
5. Respiratory therapist
6. Radiology technician
7. Laboratory technician
8. Emergency department UA
9. Security
10. Patient Care Supervisor
11. ED UA/WC

For Level 2 Pediatric TTA: Pediatrician will be called at the request of the ED physician

The individual roles of the team members are subject to change based on the needs of the patient and resources available during resuscitation.

Emergency Physician/ Surgeon/ Pediatrician Duties and Expectations:
- Unless caring for another critically ill patient, ED physician will don appropriate PPE and be present in the trauma bay upon arrival of the patient
- Assume primary responsibility for patient stabilization and the Team Leader role:
  - ED Physician: Responsible for all trauma activations until surgeon arrives; typically maintains responsibility for Level 2 patients.
  - Surgeon: Assumes responsibility for Level I patients upon arrival (expectation is that the surgeon will arrive within 30 minutes of the Level I activation)
- Complete primary and secondary surveys within 15 minutes of patient arrival:
  - Call out the primary assessment results to be recorded by Recording RN OR document results themselves on the trauma flow sheet
  - Direct resuscitative efforts
  - Perform serial exams of patient
  - Perform procedures as needed
  - Provide definitive care
  - Facilitates admission or transfer within 1 hour of patient’s
arrival in the ED
- Completes Trauma Admission Protocol
- **OR**
- Initiates transfer to a higher level of care
- Accepting physician communication
- Completes transfer paperwork

**Recorder Duties and Expectations (ED RN):**

- Ascertain that Trauma Team Activation has been called according to the activation criteria
- Ensure preparation of trauma room, equipment and team members
- Write known data on white board in room in the MIST format:
  - Mechanism of Injury
  - Injuries Identified
  - Symptoms
  - Treatment prior to arrival
- Document arrival /attendance of trauma team members and enforce PPE for every member in the room. PPE includes a lead apron worn under the gown of the right, left and primary nurses.
- Call out and enforce “TTA Timeout” upon EMS arrival (60 seconds to let EMS speak without interruption)
- Document on the Trauma flowsheet
  - EMS report
  - Primary and secondary assessment as called out by physician
  - Reassessment, interventions, procedures and outcomes
- **Monitor and reinforce “traffic control” within room**

**Right Side RN Duties and Expectations (ICU RN):**

- Don appropriate PPE
- Assist with disrobing patient and apply cardiac monitor, pulse oximetry, and automatic blood pressure (is simultaneous with Primary Survey by physician.
- Establish first IV is not already done by EMS; obtain blood for lab if able (inform Primary RN that you are ready for lab so they can call them in)
- Monitor right side IV fluid replacement /site patency
- Assist with right side interventions (chest tube, etc.)
- Insert tubes: OG, Foley
- Assist on left side if needed
- Inform Primary RN of all procedures, interventions, and assessment findings
Left Side / Primary RN Duties and Expectations (ED RN):

- Don appropriate PPE, including a lead apron worn under the gown
- Obtain a manual BP before doing anything else
- Work with right side RN to disrobe patient
- Place second IV if not already done by EMS and obtain blood if needed, call in lab tech if needed
- Administer medications (i.e. tetanus) as directed
- Monitor left side IV fluid replacement/site for patency
- Administer blood products as directed
- Assist with left side interventions (chest tube, etc)
- Perform CPR if needed (can delegate to UC/house float personnel)
- Assist right side RN as needed
- May need to serve as Team Leader and initiate primary survey if ED physician is unavailable upon patient arrival.
- Call for lab and radiology techs when right side nurse or physician Team Leader tells you they are ready
- Assume nursing care for the ED visit after the conclusion of the primary and secondary surveys. During the primary and secondary survey, the Primary RN maintains situational awareness of the activation and coordinates “the big picture”.
- Reconcile verbal physician orders
- Document medication administration in EPIC
- Accompany patient on transfers within the hospital if indicated by patient condition
- Ensure completion of transfer paperwork
- Report to tertiary care facility or patient’s admit nurse

Radiology:

- Wait outside room until summoned by the Primary RN or Physician Team Leader
- Perform bedside chest film in primary survey and pelvis film in secondary survey
- Perform further diagnostic studies as directed by physician.

Laboratory:

- Wait outside the trauma bay until summoned by the Primary RN or the Physician Team Leader
- Assist RN with obtaining blood specimens
TRAUMA ALERT: TEAM ACTIVATION PROTOCOL

Hand RN:
- Hand RN appropriate tubes if vacutainer device is used
- Supply RN with syringes or other supplies needed to facilitate blood draw from IV start
- Perform venipuncture as needed
- Perform lab tests as ordered
- Facilitate obtaining appropriate blood products as needed

Respiratory Therapy:
- Assemble and manage respiratory equipment
- Station self at head of bed to assist with airway management
- Assist with/perform respiratory procedures:
  - Supplemental oxygen management
  - Intubation
  - End tidal CO2/capnography
  - Suctioning
  - Bag-valve mask
  - Arterial blood gases
  - Airway maintenance (chin lift and jaw thrust) during cervical spine immobilization.

Patient Care Supervisor Expectations:
- Obtain/delegate additional nursing staff as needed
- Traffic control outside of room
- Keep family updated and provide support
- Assist with PPE compliance
- Assist with maintaining patient care flow for other patients
- Completion of organ donation paperwork if applicable

Medical/Surgical RN:
- Assist with care for ED patients in progress (answer call lights, assist with orders, obtain specimens)
- In instance of multiple victim trauma, may need to perform as recorder and document on the Trauma Flow Sheet
- Check in with ED Charge Nurse OR Patient Care Supervisor upon arrival to the ED for assignment/duties.

Security:
- Maintain security of trauma resuscitation area
- Obtain patient charts from health information in off hours if needed
- Secure helipad and assist transport crew with equipment as needed
**ED Unit Assistant:**
- Order all lab and imaging
- Facilitate communications: consults, transfers tests
- Prepare transfer documentation
- Restock trauma room supplies

**Anesthesia:**
- Assist with airway management as needed
- Assist with vascular access as needed
- Assist with sedation/anesthesia management for procedures as needed
- MDA or CRNA may serve as Team Leader for individual patients in the event of multi-victim activations

**Surgical Team:**
- Report to the ED and await instruction from surgeon

**Procedure:**

1. The ED charge nurse or ED physician receives report of imminent arrival of trauma patient and appropriate trauma team level is announced per established protocol
2. Team members assemble in the ED and upon arrival of patient(s) assume duties as established in job action sheets
3. Early consideration of transfer to tertiary care by ED physician/Surgeon
4. Team members stay active in their roles until disposition of patient or dismissal by Team Leader or Primary RN

**Guiding Principles:**
- **Trauma Standing Order Sheet will be utilized under the direction of the emergency department physician**
- Verbally acknowledge orders; inform the source when the request has been completed; when giving orders, ensure their receipt.
- Personal protective equipment (PPE) should be worn by all personnel who work directly with the patient. This includes: gowns, gloves, masks to include eye shields, shoe covers, surgical caps. Wear a lead apron if caring for patient while x-rays are being taken.
- Select proximal sites for peripheral IVs when possible.
- Maintain patient privacy and dignity. Ensure that the patient is
informed of procedures before they are performed.
- Continuously ascertain the patient’s comfort level (e.g., pain, temperature)
- If not directly involved in patient care, stand in an area removed from the patient until called upon or dismissed
- Place the patient’s clothing/belongings into labeled bags as soon as possible.

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<tbody>
<tr>
<td>Internal References:</td>
<td>Range Regional Health Services Policy/Procedure Manual</td>
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<tr>
<td>Source/Submitted By:</td>
<td>Anne Eustice, RN, BSN, CEN  Trauma Coordinator</td>
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<tr>
<td>Issuing Department:</td>
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<tr>
<td>Date Effective:</td>
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<td>Approved By:</td>
<td>Julie Houle, MD  5-12-15</td>
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<td></td>
<td><em>Sandra Hanson, MD FACS</em>  5-12-15</td>
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