Procedure

CCHMC Trauma Service Procedure	*Procedure Number*	TR-03
Criteria for Trauma Team Activation	*Effective Date*	06/2021
	Page	1 of 4

1.0 SCOPE

1.1. Trauma Resuscitation Team is activated based upon information from the field, a referring hospital or on the patient's condition on presentation to the Emergency Department (ED).
1.2. If at any time there is question regarding status of the patient, the Trauma Resuscitation Team should be activated.
1.3. A three-tiered response system allows for appropriate utilization of personnel.
1.6 Trauma Stat for the unstable and most seriously injured child.
1.6 Trauma Alert for the stable but seriously injured child.
1.6 Trauma Evaluation (Eval) for the child with potential for injury and needs rapid evaluation.
1.4. Notification for Trauma Stat and Trauma Alert occurs via hospital paging system. All members are simultaneously notified of an incoming trauma patient.

2.0 DEFINITIONS

2.1. **Trauma Stat**: highest activation which mobilizes a 22-member team from various disciplines within the hospital to manage the unstable and most seriously injured child.
2.2. **Trauma Alert**: mobilization of team except for anesthesia, OR personnel and radiology who are not required to attend; used to manage the stable but seriously injured child.
2.3. **Trauma Eval**: lowest level of activation, initiated with the arrival of a stable, previously evaluated child or when a child arrives with a trauma mechanism which is minor in nature.
2.4. **TBSA**: Total Body Surface Area
2.5. **Normal vital signs for age**:

Age-Appropriate Vital Signs
Modified from PALS 2016

	Heart rate	Respiratory Rate	Systolic Blood Pressure
Infant (1 – 12 months)	90 – 180	30 – 53	>70
Toddler (1 – 2 years)	80 – 140	22 – 37	>70
Preschool (3 – 5 years)	65 – 120	20 – 28	>80
School-Age (6 – 12 years)	58 – 118	18 – 25	>85
Adolescent (12+ years)	50 - 100	12 - 20	>90

3.0 PROCEDURES

3.1. Activation Criteria for **Trauma Stat:**
3.1.1. Any penetrating wound of the head, neck, or trunk
3.1.2. Tachycardia and / or poor perfusion or unexplained tachycardia (no significant pain or crying as a source)
3.1.3. Blood given prior to the patient's arrival
3.1.4. Hypotension
3.1.5. 40 mL/kg fluid bolus prior to arrival
3.1.6. Respiratory difficulty as evidenced by
3.1.6.1. Significant increase or decrease in respiratory rate
3.1.6.2. Significant retractions or grunting
3.1.6.3. Patient intubated prior to arrival
3.1.6.4. Unable to maintain or difficult airway
3.1.7. Glasgow Coma Score (GCS) ≤ 8
3.1.8. GCS deterioration by 2
3.1.9. Hypothermic arrest

3.2. Activation Criteria for **Trauma Alert:**
- 3.2.1. Evidence of abdominal injury on physical exam
  - 3.2.1.1. Abdominal tenderness upon palpation
  - 3.2.1.2. Abdominal bruising or seat belt mark
  - 3.2.1.3. Without hemodynamic compromise
- 3.2.2. GCS 9 – 13
- 3.2.3. Spinal cord injury with neurologic deficit
- 3.2.4. Two or more proximal long bone fractures
- 3.2.5. Burns ≥ 10% TBSA
- 3.2.6. Ejection from vehicle
- 3.2.7. Significant vascular injury including amputation of limb proximal to wrist or ankle
- 3.2.8. Emergency Department discretion

3.3. Activation Criteria for **Trauma Eval:**
- 3.3.1. Motor vehicle collision
- 3.3.2. Struck or run over by motor vehicle (pedestrian or bike)
- 3.3.3. Fall greater than 10 feet
- 3.3.4. Any mechanism deemed to place the patient at risk for multi-system injury
- 3.3.5. Any patient immobilized with a backboard and/or cervical collar
- 3.3.6. Partial or full thickness burns between 5% and 9% TBSA
- 3.3.7. Any burn less than <5% TBSA requiring immediate pain management
- 3.3.8. GSW (non-BB) to an extremity
- 3.3.9. Application of a tourniquet prior to arrival and hemodynamically stable

3.4. **Criteria for patients seen at an outside facility prior to arrival at CCHMC**
- 3.4.1. The trauma team should be activated for any patient who meets criteria regardless of prior evaluation at an outside facility.

3.5. Responding Personnel to Trauma Resuscitations

Personnel	Stat	Alert	Eval
Dr. Right (surgeon)	X	X	
Nurse Right (ED)	X	X	
Dr Left (pediatric resident)	X	X	X
Nurse Left (Trauma Core RN)	X	X	
Anesthesiologist	X		
Respiratory Therapist	X	X	
Attending Surgeon	X		
Physician Team Leader (ED)	X	X	X
PICU Fellow	X		
Nurse Team Leader (Trauma Core RN)	X	X	X
Medication Nurse (PICU and ED)	X	X	
Nurse Liaison (MPS)	X	X	
Fluid (paramedic)	X	X	X
OR Nurse	X		
PCA	X	X	X
Security	X	X	
X-ray Tech	X	X	
Chaplains	X	X	
Social Services	X		
Radiologist	X		
Child Life Specialist	X	X	X
Service Center	X	X	

3.6. Consult physicians/APPs must respond for emergency consultation by the pediatric trauma team within 30 minutes of requested initiation. Critical consultations for the pediatric trauma patient include but are not limited to the following situations.

3.6.1. Neurosurgical response

3.6.1.1. Traumatic brain injury with greater than a 4 mm midline shift

3.6.1.2. Spine fracture / dislocation with associated neurological deficit

3.6.2. Orthopaedic response

3.6.2.1. Pulseless extremity due to injury

3.6.2.2. Full amputation of an extremity, excluding fingers and toes

3.6.3. Requested consultations, arrival time and names of the responding team members are to be documented in the trauma narrator, progress notes or provider order section of the electronic medical record (EMR) as appropriate

4.0 LIST OF ATTACHED FORMS

4.1. N/A

5.0 REFERENCES

5.1. Resources for Optimal Care of the Injured Patient: 2006; American College of Surgeons Committee on Trauma; Chicago, Illinois.

6.0 APPROVALS

All revisions of this procedure are approved by the Trauma Services Department. This procedure is reviewed every three years or sooner if deemed necessary. Authority for this document resides with the Trauma Services Department. This procedure is approved by the Trauma Service Manager and the Director of Trauma Services.

HISTORY
Original Date
05/95
Revision Date
7/00, 9/06, 10/10, 1/13, 3/14, 2/15, 10/16, 10/17, 6/18, 4/19, 6/19, 11/20, 6/21
Review Date
10/16, 4/19

Procedure

Trauma Stat:

- Any penetrating injury to head, neck or trunk
- Respiratory difficulty as evidenced by one or more of the following:
  - Significant increase or decrease in respiratory rate
  - Significant retractions or grunting
  - Patient intubated prior to arrival
  - Unable to maintain or difficult airway
- Tachycardia and / or poor perfusion or unexplained tachycardia (no significant pain or crying as a source)
- Hypotension
- Blood given prior to the patient's arrival
- 40 mL/kg bolus given prior to arrival
- Glasgow Coma Score (GCS) ≤8
- GCS deterioration by 2

OR Resuscitation:

- Full arrest with pre-hospital signs of life following a non-cranial, penetrating chest or abdominal injury
- Penetrating injury unresponsive to 40 mL/kg fluid administration
- At the discretion of the ED and surgical attending

Trauma Alert:

- Evidence of abdominal injury on physical exam
- Abdominal tenderness upon palpation
- Abdominal bruising or seatbelt mark
- Without hemodynamic compromise
- GCS 9 – 13
- Spinal cord injury with neurologic deficit
- Two or more proximal long bone fractures
- Ejection from automobile
- Partial or full thickness burn of ≥10% TBSA
- Significant vascular injury including amputation of limb
- Emergency Department discretion

Normal Vital Signs Table
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Trauma Evaluation

- Motor vehicle collision
- Struck or run over by motor vehicle (pedestrian or bike)
- Fall greater than 10 feet
- Any mechanism deemed to place the patient at risk for multi-system injury
- Any patient immobilized with a backboard and/or cervical collar
- Partial or full thickness burn between 5% and 9% TBSA
- Any burn less than 5% requiring immediate pain management
- GSW (non-BB) to an extremity
- Tourniquet application prior to arrival and hemodynamically stable

*****The trauma team should be activated for any patient who meets criteria regardless of prior evaluation at an outside facility*****