

**TRAUMA TRIAGE
PROTOCOLS**

204.10

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Rev. 12/06

CHAPTER	II	Operations
SUBJECT	4	Emergency Medical Services
TOPIC	10	Trauma Triage

PURPOSE

1. To establish a standard approach and general guidelines for triage and treatment of trauma patients.

GOALS OF TRAUMA TRIAGE

1. Upon arrival at the scene of an incident involving trauma (including, but not limited to MVAs, falls greater than 2x the patient's height, shootings, stabbings, and assaults) emergency personnel shall determine the number and nature of injuries.
2. In the event that there are multiple injuries, the incident command system should be invoked and triage responsibilities assigned. (Reference MCI protocol).
3. Personnel shall rapidly assess the situation and identify the need for additional or specialty resources (Heavy Rescue, mutual aid etc.). Requests for additional response units shall be made as early in the incident as possible.
4. The OIC, transportation officer or individual on scene with the highest level of emergency medical services training shall determine whether the patient meets the criteria for transportation to a Trauma Center. This decision shall be made in accordance with the Academy of Medicine Protocol and the Region I Trauma Triage Protocols. A Glasgow Coma Scale and copy of the Region I protocols are included for reference as a part of this procedure to facilitate the decision making process.
5. Once it has been determined that a patient has met the criteria for transportation to a Trauma Center, personnel shall provide an explanation to the patient. As with any other situation, this explanation must address the benefits of treatment in a *Verified Trauma Center* as well as any potential risks.
6. Likewise, all conscious adults who are alert and oriented shall express their consent for treatment and transportation. All unconscious, disoriented or otherwise mentally incompetent adults fitting the criteria of a "Trauma Patient" shall be transported to the nearest Level I or Level III Trauma Center under the doctrine of implied consent.

MAXIMUM ALLOWABLE ON SCENE TIME

1. No more than ten (10) minutes shall be spent on scene of the incident to assess, treat and package a trauma patient. Situations or incidents in which the on scene time has exceeded the 10-minute maximum shall be considered a violation of this policy unless details specific to that incident are noted in the patient care report.

ADULT TRAUMA CENTERS:

1. In this area (Region I Greater Cincinnati) has two *Verified Trauma Centers* that may be used interchangeably. Of these trauma centers, the facility that is closest in proximity to the location of the incident (the call address or where the patient was found) shall be deemed the most appropriate.

These include:

Level I - University Hospital
OR
Level III - Bethesda North

PEDIATRIC TRAUMA CENTERS:

1. Pediatric Trauma Patients shall be transported to:

Level I - Children's Hospital Medical Center

EXCEPTIONS:

1. All trauma patients meeting the criteria outlined in this policy, and the Regional Trauma Triage Guidelines shall be transported to the closest Trauma Center EXCEPT in the following:
 - a. The patient's airway cannot be controlled by conventional means.
 - b. There is an impairment of the patient's breathing due to injury.
 - c. The patient is exhibiting uncontrolled arterial bleeding.
 - d. There is a potential for an unstable airway.
 - e. The patient does not meet the "Trauma Patient" criteria.
 - f. The patient's condition deteriorates to cardiac arrest.
 - g. The patient refuses to be transported to the appropriate TRAUMA center (against

EMS advice).

AIR TRANSPORTATION:

1. Trauma Patients shall ONLY be transported by Air in the following circumstances.
There is a greater than 20 minute extrication and/or greater than 30 minute transport time.

NOTIFICATION:

1. Notification shall be made to the receiving hospital either by cellular phone or radio as soon as feasible to allow the hospital to alert its trauma team to assemble.
2. It is also acceptable to request notification through the communications center.
3. At a minimum, this notification shall include:
 - a. Unit identification number and provider level
 - b. Patient age
 - c. The most recent set of vital signs
 - d. The most recent GCS
 - e. The ETA (estimated time of arrival) to the trauma center.
4. The time and method of contact; or conversely, the reason that contact was not made, shall be reported in the patient care report.

PATIENT CARE REPORT:

1. A patient care report shall be submitted by personnel transporting the patient. The patient care report shall include all pertinent information regarding the incident, the patient and the care administered by emergency medical services. Emergency medical personnel shall also document whether a notification call was made, and provide rationale for on scene times that exceed 10 minutes.

I. Evaluation of the Adult Trauma Patient - *Any of these constitute a "trauma patient"*

A. PHYSIOLOGIC CRITERIA

1. Significant signs of shock accompanied by:
 - a. Pulse > 120 or blood pressure < 90 (geriatric patients may be in shock with a BP >90)
2. Airway or Breathing Difficulties
 - a. Respiratory rate of <10 or >30
 - b. Intubated patient
3. Neurologic Considerations
 - a. Evidence of Head Injury
 1. Glasgow coma scale < 13 or equal to
 2. Alteration in LOC during examination or thereafter; LOC > than 5 min.
 3. Failure to localize pain.
 - b. Suspected spinal cord injury (paralysis due to an acute injury; sensory loss)

B. ANATOMIC CRITERIA

1. Penetrating trauma (to the head, chest or abdomen, neck and extremities proximal to knee or elbow)
2. Injuries to the extremities where the following physical findings are present:
 - a. Amputations proximal to the wrist or ankle
 - b. Visible crush injury
 - c. Fractures of two or more proximal long bones
 - d. Evidence of neurovascular compromise
3. Tension pneumothorax which is relieved (an unrelieved tension pneumothorax would fit the definition of an unstable ABC)
4. Injuries to the head, neck, or torso where the following physical findings are present:
 - a. Visible crush injury
 - b. Abdominal tenderness, distention, or seat belt sign
 - c. Pelvic fracture
 - d. Flail chest
5. Signs or symptoms of spinal cord injury.
6. Burn injury >10% TBSA and potential for other associated traumatic injuries

**C. OTHER CRITERIA/CONSIDERATIONS, WHICH ALONE DO NOT
CONSTITUTE A TRAUMA PATIENT**

1. Significant Mechanisms of Injury Should Prompt a High Index of Suspicion
2. Ages > 60 Should Prompt a High Index of Suspicion

II. Transportation of the Adult Trauma Patient

A. Ground Transportation Guidelines - Time Considerations

1. 30 minutes or less from a Trauma Center. TRAUMA CENTER
(excluding uncontrolled airway or traumatic CPR)
2. Greater than 30 minutes to a trauma center. nearest appropriate facility

PEDIATRIC TRAUMA PATIENT (<16 YEARS OF AGE)

I. Evaluation of the Pediatric Trauma Patient

A. PHYSIOLOGIC CRITERIA

1. Significant signs of shock (weak pulses, pallor) accompanied by:
 - a. Tachycardia (Table 2) or bradycardia (Table 3)
 - b. Hypotension (Table 4)
2. Airway/Breathing difficulties
 - a. Intubated patient
 - b. Tachypnea (see table 1)
 - c. Stridor
 - d. Hoarse voice or difficulty speaking
 - e. Significant grunting, retractions
 - f. Cyanosis or need for supplemental oxygen
3. Neurologic considerations
 - a. Evidence of Head Injury
 1. Glasgow Coma Scale < or equal to 13
 2. Alteration in LOC during examination or thereafter; LOC > than 5 min.
 3. Failure to localize pain
 - b. Suspected Spinal Cord Injury (paralysis or alteration in sensation)

B. ANATOMIC CRITERIA

1. Penetrating trauma (to the head, chest or abdomen, neck and extremities proximal to knee or elbow)
2. Injuries to the extremities where the following physical findings are present:
 - a. Amputations proximal to the wrist or ankle
 - b. Visible crush injury
 - c. Fractures of two or more proximal long bones
 - d. Evidence of neurovascular compromise

3. Tension pneumothorax, which is, relieved (an unrelieved tension pneumothorax would fit the definition of an unstable ABC).
4. Injuries to the head, neck, or torso where the following physical findings are present:
 - a. Visible crush injury
 - b. Abdominal tenderness, distention, or seat belt sign
 - c. Pelvic Fracture
 - d. Flail Chest
5. Signs or symptoms of spinal cord injury.
6. Burn injuries > 10% TBSA and potential for other associated traumatic injuries.

Table 1: Maximum Acceptable Respiratory Rates by Age	
<i>Age</i>	<i>Respiratory Rate (resp/min)</i>
<6months	50
6 months to 6 Years	40
>6 years	30

Table 2: Maximum Acceptable Heart Rates by Age	
<i>Age</i>	<i>Heart Rate (bpm)</i>
<6 months	180
6 months-1 year	170
1 year-2 years	150
3-7 years	140
8-11 years	130
12-16	120

Table 3: Bradycardia	
<i>Age</i>	<i>Heart Rate (bpm)</i>
Infant:	80
Child:	70
Adolescent:	60

Therapy should be reserved for the patient, who is symptomatic, as manifested by signs or symptoms of decreased blood flow to end organs.

Table 4: Min. Acceptable Systolic Blood Pressure by Age	
<i>Age</i>	<i>Systolic Blood Pressure</i>
<1-month	60 mmHg
1 month to 1-year	70 mmHg
>1 year	70+(Age in years x 2)

C. OTHER CRITERIA/CONSIDERATIONS FOR THE PEDIATRIC TRAUMA PATIENT, WHICH ALONE DO NOT CONSTITUTE A TRAUMA PATIENT:

1. Significant Mechanism of Injury Should Prompt a High Index of Suspicion and should be considered in the evaluation. Mechanisms particularly dangerous for pediatric patients include:
 - a. Improperly restrained child in MVC (airbag injuries included)
 - b. ATV crashes
2. Special Situations that may require the resources of a pediatric trauma center:
 - a. Congenital defects
 - b. Chronic respiratory illness
 - c. Diabetes
 - d. Bleeding disorder or anticoagulants
 - e. Immunosuppressed patients (i.e., patients with cancer, organ transplant patients, etc.)

TRANSPORTATION

II. Transportation of the Pediatric Trauma Patient:

A. Ground Transportation Guidelines - Time Considerations

1. 30 minutes or less from a Pediatric Trauma Center. Pediatric Trauma Center (excluding uncontrolled airway or traumatic arrest)
2. Greater than 30 minutes to a Pediatric Trauma Center. Nearest appropriate facility

Addendum to Region I EMS Trauma Triage Protocol

Exceptions to mandatory transport

A) Emergency medical service personnel shall transport a trauma victim, as defined in section

4765.01 of the Revised Code and this chapter, directly to an adult or pediatric trauma center

that is qualified to provide appropriate adult or pediatric care, unless one or more of the following exceptions apply:

(1) It is medically necessary to transport the victim to another hospital for initial assessment and stabilization before transfer to an adult or pediatric trauma center;

a) **Patients should be transported to the nearest appropriate facility if any of the following exists:**

i) **Airway is unstable and cannot be controlled/managed by conventional methods**

ii) **Potential for unstable airway, i.e., facial/upper torso burn)**

iii) **Blunt trauma arrest (no pulses or respirations**

(2) It is unsafe or medically inappropriate to transport the victim directly to an adult or

pediatric trauma center due to adverse weather or ground conditions or excessive transport time.

a) **Ground Transportation**

i) **30 minutes or less from a Trauma Center. TRAUMA CENTER**

(excluding uncontrolled airway or traumatic CPR)

ii) **Greater than 30 minutes to a trauma center. Nearest appropriate facility.**

(3) Transporting the victim to an adult or pediatric trauma center would cause a shortage of local emergency medical service resources;

(4) No appropriate adult or pediatric trauma center is able to receive and provide adult or

pediatric trauma care to the trauma victim without undue delay;

(5) Before transport of a patient begins, the patient requests to be taken to a particular hospital that is not a trauma center or, if the patient is less than eighteen years of age or is not able to communicate, such a request is made by an adult member of the patient's family or a legal representative of the patient.

Glasgow Coma Scale

<i>Adult:</i>	<i>Child:</i>	<i>Infant:</i>	<i>Score:</i>
Eye Opening			
Spontaneous	Spontaneous	Spontaneous	4
Voice	Voice	Voice	3
Pain	Pain	Pain	2
None	None	None	1
Verbal			
Oriented	Smiles, Interacts	Babbles or cries spontaneously	5
Confused	Cries but Consolable	Crying, but consolable	4
Inappropriate words	Intermittently consolable	Cries to Pain (weak cry)	3
Incomprehensible sounds	Agitated/inconsolable	Moans to Pain	2
None	None	None	1
Motor			
Obeys Commands	Spontaneous Movement	Spontaneous Movement	6
Localizes Pain	Localizes Pain	Localizes Pain	5
Responds to Pain (Withdrawal)	Withdraws from Pain	Withdraws from Pain	4
Responds to Pain (Flexion)	Abnormal Flexion	Abnormal Flexion	3
Responds to Pain (Extension)	Abnormal Extension	Abnormal Extension	2
None	None	None	1