

West Michigan Regional MCC

TRAUMA AND ENVIRONMENTAL Trauma Destination Protocol

Date: January 12, 2017

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Trauma Destination Protocol

PURPOSE: This protocol was developed to assist the emergency responder to determine what constitutes a trauma patient and where to transport the trauma patient. The goal of any trauma patient assessment and transportation guideline is to facilitate delivery of the patient to the most appropriate level of care in the most expeditious manner.

This protocol applies to all patients who are seriously injured or potentially seriously injured. The criteria listed below serve to identify the injured patients who are likely to require comprehensive trauma care. This protocol is meant to supplement, but not replace, the judgment of the EMS personnel at the scene.

An **ADULT** trauma patient is an injured patient that is, or reasonably appears to be 15 years of age or older and meets any of the following criteria or when in the judgment of EMS personnel, evidence for potential serious injury exists. A **PEDIATRIC** trauma patient is an injured or potentially injured patient that is, or reasonably appears to be, under the age of 15 who meets any of the following criteria or when in the judgment of EMS personnel evidence for potential serious injury exists.

TRAUMA TRIAGE DESTINATION DECISIONS

1. Any **ADULT** trauma patient meeting the physiologic or anatomic criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. Any **PEDIATRIC** trauma patient meeting the physiologic or anatomic criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. When circumstances allow, pediatric patients should be transported to a pediatric trauma center. Appropriate centers are determined by the Medical Control Authority as indicated in the **West Michigan Regional Medical Control Consortium Trauma Destination Reference Document**. Notify the trauma center as soon as possible, including inclusion criteria and ETA.

PHYSIOLOGIC CRITERIA

Vital signs & level of consciousness

- Glasgow Coma Scale <14
- Systolic Blood Pressure <90 mm Hg
- Respiratory rate <10 or >29 breaths per minute, or need for ventilatory support

Pediatric Vital Sign Reference

Hypotension

- 0-5 months: SBP < 60
- ≥ 6 mos – 5 yrs: SBP < 70
- ≥ 6 yrs: SBP < 80

Respiratory Distress

- 0-5 months: RR < 20
- ≥ 6 mos – 12 yrs: RR < 16
- ≥ 13 yrs: RR < 12

ANATOMIC CRITERIA

- All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g. flail chest)
- Two or more proximal long bone fractures (femur and or humerus)
- Crush, degloved, mangled or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fracture
- Open or depressed skull fracture
- Paralysis

MCA: **West Michigan Regional Medical Control Consortium**
MCA Board Approval Date: **January 12, 2017**
MDHHS Approval Date: **April 28, 2017**
MCA Implementation Date: **July 1, 2017**

Section 2.1

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2. Any **ADULT** trauma patient meeting the mechanism of injury or special considerations criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. Any **PEDIATRIC** trauma patient meeting the mechanism of injury or special considerations criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. When circumstances allow, pediatric patients should be transported to a pediatric trauma center. Appropriate centers are determined by the Medical Control Authority as indicated in the **West Michigan Regional Medical Control Consortium Trauma Destination Reference Document**. Notify the trauma center as soon as possible, including inclusion criteria and ETA.

MECHANISM OF INJURY

Mechanism and evidence of high-energy impact

- Falls
 - **ADULT** >20 feet (one story is equal to 10 ft.)
 - **PEDIATRIC** > 10 feet (one story = 10 ft.) or two or three times height of the child
- High-risk auto crash
 - Intrusion, including roof: > 12 in. occupant site; >18 in. any site
 - Ejection (partial or complete) from automobile
 - Death in same passenger compartment
 - Vehicle telemetry data consistent with a high risk injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- Motorcycle/Recreational Vehicle crash > 20 mph

SPECIAL CONSIDERATIONS

Special patient or system considerations

- Older Adults
 - Risk of injury/death increases after age 55
 - SBP < 110 mm Hg may represent shock after age 65
 - Low impact mechanisms (e.g. Ground level falls) may result in severe injury
 - Children should be triaged preferentially to pediatric capable trauma centers
 - Anticoagulation and bleeding disorders
 - Patients with head injury are at high risk for rapid deterioration
- (continues on next page)*

SPECIAL CONSIDERATIONS (Continued)

- Burns
 - Without other trauma mechanism: triage to burn facility
 - With trauma mechanism: triage to trauma center
- Pregnancy >20 weeks
- Any other injuries felt by EMS personnel to require specialized trauma care

Exception to these triage guidelines is made for trauma patients requiring airway intervention that cannot be accomplished by pre-hospital personnel. These patients will be transported to closest appropriate hospital to allow for airway management, stabilization and subsequent transfer.

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Measure Vital signs and level of consciousness:

Glasgow Coma Scale ≤13
Systolic Blood Pressure (mmHg) <90 mmHg
Respiratory Rate <10 or >29 breaths per minute,
or need for ventilatory support
(<20 in infants aged <1 year)

Pediatric Vital Sign Reference

Hypotension:

0-5 months: SBP < 60
≥ 6 mos – 5 yrs: SBP < 70
≥ 6 yrs: SBP < 80

Respiratory Distress:

0-5 months: RR < 20
≥ 6 mos – 12 yrs RR: < 16
≥ 13 yrs : RR < 12

No

YES

Transport to a trauma center.

Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system (level 1 or 2).

Assess anatomy of injury:

- All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability or deformity
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fracture
- Open or depressed skull fracture
- Paralysis

No

YES

Transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center.

Assess mechanism of injury and evidence of high-energy impact:

- Falls
 - Adults: > 20 feet (one story is equal to 10 feet)
 - Children: > 10 feet or two or three times the height of the child
- High-risk auto crash
 - Intrusion, including roof: >12 inches occupant site; > 18 inches any site
 - Ejection (partial or complete) from automobile
 - Death in same passenger compartment
 - Vehicle telemetry data consistent with a high risk of injury
- Auto vs Pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- Motorcycle/Recreational Vehicle crash >20 mph

No

YES

Transport to a trauma center, or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.

Assess special patient or system considerations:

- Older Adults
 - Risk of injury/death increases after 55 years
 - SBP <110 may represent shock after age 65
 - Low impact mechanisms (e.g. ground level falls) may result in severe injury
- Children
 - Should be triaged preferentially to pediatric capable trauma centers
- Anticoagulants and bleeding disorders
 - Patients with head injury are at high risk for rapid deterioration
- Burns
 - Without other trauma mechanism: triage to burn facility
 - With trauma mechanism: triage to trauma center
- Pregnancy > 20 weeks
- EMS provider judgement

NO

**TRANSPORT ACCORDING TO
PROTOCOL**

When in doubt, transport to a trauma center.