

**2013 ADULT OOHTTDDP**

<b>Revision 2013</b>	<b>Previous</b>
<b>Step 1 - Assess for Time Critical Injuries: Level of Consciousness &amp; Vital Signs:</b>	<b>Step 1 - Assess for Time Critical Injuries: Level of Consciousness &amp; Vital Signs:</b>
Glasgow Coma Score $\leq 13$ Respiratory rate $<10$ or $>29$ breaths per minute, or need for ventilatory support Systolic B/P (mmHg) less than $<90$ mmHg	Glasgow Coma Score $<14$ Respiratory diff./rate $<10$ or $>29$ Systolic B/P $<90$ Heart Rate $>120$ (removed)
<b>Step 2 - Assess for Anatomy of an Injury:</b>	<b>Step 2 - Assess for Anatomy of an Injury:</b>
All penetrating injuries to head, neck, torso and extremities proximal to elbow and knee Chest wall instability or deformity (e.g., flail chest) Suspected two or more proximal long-bone fractures Crushed, degloved, mangled, or pulseless extremity Amputation proximal to wrist or ankle Suspected pelvic fractures Open or depressed skull fracture Paralysis or Parasthesia Partial or full thickness Burns $> 10\%$ TBSA or involving face/airway	All Penetrating injury to head, neck, torso, and extremities proximal to elbow and knee Flail chest Any open long bone fracture Suspected two or more long bone fractures Crushed, degloved, or mangled extremity Amputation proximal to wrist or ankle Suspected pelvic fracture Open or depressed skull fracture Paralysis or Parasthesia Partial or full thickness Burns $> 10\%$ TBSA or involving face/airway EMS provider judgment for possible abdominal or thoracic injuries (removed).
<b>Step 3 - Consider Mechanism of Injury &amp; High Energy Transfer:</b>	<b>Step 3 - Consider Mechanism of Injury &amp; High Energy Transfer:</b>
Falls – Adult: $> 20$ ft. (one story is equal to 10 feet) Auto vs. pedestrian/bicyclist thrown, run over, or with significant ( $>20$ mph) impact High-risk auto crash — Interior compartment 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 high risk of injury Motorcycle crash $>20$ mph	Falls – Adult: $> 20$ ft. (1 story = 10 ft) High-risk auto crash: Intrusion: $> 12$ in, occupant site; $> 18$ in, any site, Ejection (partial or complete) from automobile Death in same passenger compartment, Vehicle telemetry data consistent with high risk of injury Auto vs. pedestrian/bicyclist thrown, run over, or with significant ( $>20$ mph) impact Motorcycle crash $> 20$ mph Rollover (unrestrained occupant) Bicyclist into handlebars

<b>Step 4 - Consider risk factors:</b>	<b>Step 4 - Consider risk factors:</b>
<p><b>Older adults</b>  Risk of injury/death increases after age 55 years  SBP&lt;110 might represent shock after age 65 years  Low impact mechanisms (e.g. ground level falls) might result in severe injury  Pregnancy &gt; 20 weeks  EMS provider judgment  ETOH/Drug use</p> <p><b>Anticoagulants and bleeding disorders</b>  Patients with head injury are at high risk for rapid deterioration</p>	<p>Age &gt; 55 yrs. (Risk of injury/death increases)  Anticoagulation and bleeding disorders  Time-sensitive extremity injury  Pregnancy &gt; 20 weeks  EMS provider judgment</p>

**2013 PEDIATRIC OOHTTDDP**

<b>Revision 2013</b>	<b>Previous</b>
<b>Step 1 - Assess for Time Critical Injuries: Level of Consciousness &amp; Vital Signs</b>	<b>Step 1 - Assess for Time Critical Injuries: Level of Consciousness &amp; Vital Signs</b>
<p>Abnormal Responsiveness: abnormal or absent cry or speech. Decreased response to parents or environmental stimuli. Floppy or rigid muscle tone or not moving. Verbal, Pain, or Unresponsive on AVPU scale.  OR  Airway/Breathing Compromise: obstruction to airflow, gurgling, stridor or noisy breathing. Increased/excessive retractions or abdominal muscle use, nasal flaring, stridor, wheezes, grunting, gasping, or gurgling. Decreased/absent respiratory effort or noisy breathing. Respiratory rate outside normal range.  OR  Circulatory Compromise: cyanosis, mottling, paleness/pallor or obvious significant bleeding. Absent or weak peripheral or central pulses; pulse or systolic BP outside normal range. Capillary refill &gt; 2 seconds with other abnormal findings.  Glasgow Coma Score ≤13</p>	<p>Abnormal Responsiveness: abnormal or absent cry or speech. Decreased response to parents or environmental stimuli. Floppy or rigid muscle tone or not moving. Verbal, Pain, or Unresponsive on AVPU scale.  OR  Airway/Breathing Compromise: obstruction to airflow, gurgling, stridor or noisy breathing. Increased/excessive retractions or abdominal muscle use, nasal flaring, stridor, wheezes, grunting, gasping, or gurgling. Decreased/absent respiratory effort or noisy breathing. Respiratory rate outside normal range.  OR  Circulatory Compromise: cyanosis, mottling, paleness/pallor or obvious significant bleeding. Absent or weak peripheral or central pulses; pulse or systolic BP outside normal range. Capillary refill &gt; 2 seconds with other abnormal findings.</p>
<b>Step 2 - Assess for Anatomy of an Injury</b>	<b>Step 2 - Assess for Anatomy of an Injury</b>
<p>All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee  Chest wall instability or deformity (e.g., flail chest)  Suspected two or more proximal long-bone fractures  Suspected pelvic fractures  Crushed, degloved, mangled, or pulseless extremity</p>	<p>All Penetrating injury to head, neck, torso, and extremities proximal to elbow and knee  Partial or full thickness burns &gt; 10% TBSA or involving face/airway  Amputation proximal to wrist or ankle Crushed, degloved, or mangled extremity  Paralysis or Parasthesia Flail chest  Suspected two or more long bone fractures Any</p>

Partial or full thickness burns > 10% TBSA or involving face/airway Open or depressed skull fracture Amputation proximal to wrist or ankle Paralysis or Parasthesia	open long bone fracture Suspected pelvic fracture Open or depressed skull fracture EMS provider judgment for possible abdominal or thoracic injuries.
<b>Step 3 - Consider Mechanism of Injury &amp; High Energy Transfer</b>	<b>Step 3 - Consider Mechanism of Injury &amp; High Energy Transfer</b>
Falls: >10 feet or two times the height of the child Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact High-risk auto crash — Interior compartment 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 high risk of injury Motorcycle crash >20 mph	Falls – > 10 feet or Pediatric: > 2-3 times the victim’s height. High-risk auto crash: Intrusion: > 12 in, occupant site; > 18 in, any site, Ejection (partial or complete) from automobile Death in same passenger compartment, Bicyclist into handlebars Vehicle telemetry data consistent with high risk of injury Any intentional injury Motorcycle crash > 20 mph Rollover (unrestrained occupant) Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
<b>Step 4 - Consider risk factors</b>	<b>Step 4 - Consider risk factors</b>
Pregnancy > 20 weeks EMS provider judgment ETOH/Drug use Anticoagulants and bleeding disorders Patients with head injury are at high risk for rapid deterioration	Age <5 yrs (Risk of injury/death increases) ETOH/drugs Time-sensitive extremity injury

## Modifications to the Out of Hospital Trauma Triage Destination Decision Protocol

### ADULT

#### Step 1. Physiologic Criteria

MODIFIED:

#### **Glasgow Coma Scale (GCS) from <14 to GCS ≤ 13**

According to Centers for Disease Control and Prevention (2012), “Experience with the 2006 Guidelines has indicated that many readers and end-users perceived that the criterion of GCS <14 recommended taking patients with a GCS of ≤14 to trauma centers. To reduce any future confusion, the Panel voted unanimously to rewrite the criterion as GCS ≤13” (p. 8).

ADDED:

#### **Need for ventilator support**

After reviewing the literature, the Panel added “or need for ventilator support” to the respiratory rate criterion, recognizing that adults and children requiring ventilator support represent a very high-risk group.

## Step 2. Anatomic Criteria

MODIFIED:

### **Crushed, degloved, mangled, or pulseless extremity**

“Pulseless” was added to the criteria for crushed, degloved, or mangled extremity since vascular injuries of the extremity may lead to significant morbidity and mortality.

### **Chest wall instability or deformity (e.g., flail chest)**

“Flail chest” was changed to “chest wall instability or deformity (e.g., flail chest): because this broader terminology ensures that additional blunt trauma to the chest will be identified.

### **Suspected two or more proximal long-bone fractures**

Wording changed from “suspected two or more long bone fractures” to “suspected two or more proximal long-bone fractures.”

### **All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee**

The wording of this criterion was modified from “elbow and knee” to “elbow or knee” to recognize that these types of injuries generally occur separately and that each can represent a severe injury.

### **Amputation proximal to wrist or ankle**

Changed “amputation proximal to wrist and ankle” to “amputation proximal to wrist or ankle” recognizing that these types of injuries most commonly occur separately and that each can represent a severe injury.

REMOVED:

EMS provider judgment for possible abdominal or thoracic injuries

## Step 3 Mechanism of Injury Criteria

ADDED/MODIFIED:

### **High-risk automobile crash**

“Intrusion: > 12 in, occupant site; > 18 in, any site,” ” changed to “High-risk auto crash--Interior compartment intrusion, including roof: >12 inches occupant site; >18 inches any site.”

“Including roof” was added to the intrusion category since this is an important predictor of trauma center need.

## Step 4. Special Patient or System Considerations

MODIFIED:

### **Older adults**

In order to strengthen this criterion, and address the problem of undertriage in older adults, the Panel added “SBP <110 may represent shock after age 65 years” and “low impact mechanisms (e.g., ground level falls) may result in severe injury” to older adults.

### **Anticoagulation and bleeding disorders**

In order to highlight the potential for rapid deterioration in anticoagulated patients with head injuries, the Panel modified this criterion to highlight the fact that anticoagulated patients with head injuries need to be evaluated at a hospital capable of rapid evaluation and imaging of these patients and initiation of reversal of anticoagulation if necessary.

ADDED:  
ETOH/Drug use

## PEDIATRIC

### Step 1. Physiologic Criteria

MODIFIED:

#### **Glasgow Coma Scale (GCS) from <14 to GCS ≤ 13**

According to Centers for Disease Control and Prevention (2012), “Experience with the 2006 Guidelines has indicated that many readers and end-users perceived that the criterion of GCS <14 recommended taking patients with a GCS of ≤14 to trauma centers. To reduce any future confusion, the Panel voted unanimously to rewrite the criterion as GCS ≤13” (p. 8).

### Step 2. Anatomic Criteria

MODIFIED:

#### **Crushed, degloved, mangled, or pulseless extremity**

“Pulseless” was added to the criteria for crushed, degloved, or mangled extremity since vascular injuries of the extremity may lead to significant morbidity and mortality.

#### **Chest wall instability or deformity (e.g., flail chest)**

“Flail chest” was changed to “chest wall instability or deformity (e.g., flail chest): because this broader terminology ensures that additional blunt trauma to the chest will be identified.

#### **Suspected two or more proximal long-bone fractures**

Wording changed from “Suspected two or more long bone fractures” to “Suspected two or more proximal long-bone fractures.”

#### **All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee**

The wording of this criterion was modified from “elbow and knee” to “elbow or knee” to recognize that these types of injuries generally occur separately and that each can represent a severe injury.

#### **Amputation proximal to wrist or ankle**

Changed “amputation proximal to wrist and ankle” to “amputation proximal to wrist or ankle” recognizing that these types of injuries most commonly occur separately and that each can represent a severe injury.

REMOVED:

EMS provider judgment for possible abdominal or thoracic injuries

### Step 3 Mechanism of Injury Criteria

ADDED/MODIFIED:

#### **Falls: 10 feet or two times the height of the child**

“Falls - >10 feet or Pediatric: > 2-3 times the victims height” was changed to “Falls: 10 feet or two times the height of the child.”

### **High-risk automobile crash**

“intrusion: > 12 in, occupant site; > 18 in, any site,” ” changed to “High-risk auto crash--Interior compartment intrusion, including roof: >12 inches occupant site; >18 inches any site.”

“Including roof” was added to the intrusion category since this is an important predictor of trauma center need.

### **Step 4 Consider risk factors**

ADDED

**Pregnancy >20 weeks**

**EMS provider judgment**

### **Anticoagulation and bleeding disorders**

In order to highlight the potential for rapid deterioration in anticoagulated patients with head injuries, the Panel modified this criterion to highlight the fact that anticoagulated patients with head injuries need to be evaluated at a hospital capable of rapid evaluation and imaging of these patients and initiation of reversal of anticoagulation if necessary.

REMOVED:

Time-sensitive extremity injury

Age <5 yrs (Risk of injury/death increases)

### **References:**

U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. (2012). Guidelines for field triage of injured patients: Recommendations of the national expert panel on field triage, 2011. (Morbidity and Mortality Weekly Report Vol. 61, No. 1). Atlanta, Georgia.

Iowa Department of Public Health: Bureau of EMS (2013). Out of Hospital Trauma Triage Destination Decision Protocols (Pediatric and Adult).