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Ohio Trauma Triage

Managing the Exceptions

- » Describe Ohio's legal definition of trauma
- » List the anatomic and physiologic criteria to be used by when evaluating adult, pediatric and geriatric trauma victims
- » Discuss the role that mechanism of injury and special considerations play in trauma triage
- » Understand the five exceptions to trauma triage

Objectives



» A person who has suffered severe damage to or destruction of tissue which satisfies both of these criteria:

1. Creates a significant risk for

- > Loss of Life
- > Loss of Limb
- > Significant, permanent disfigurement
- > Significant, permanent disability

2. Caused by

- > Blunt or penetrating injury
- > Exposure to electromagnetic, chemical or radioactive energy
- > Drowning, suffocation, strangulation, deficit or excess of heat

Trauma Patient Definition



- » Any hospital verified by the American College of Surgeons (ACS) as a Trauma Center
- » Any hospital operating under Ohio's provisional Trauma Center status
- » Any hospital in another state which is recognized by that state as a Trauma Center

Trauma Center
Ohio Legal Definition



- » A specialized hospital facility distinguished by the *immediate availability* of specialized surgeons, physician specialists, anesthesiologists, nurses and resuscitation and life support equipment on a *24-hour basis* to care for severely injured patients or those at risk for severe injury.

Trauma Center
ACS Definition



- » The ACS verifies Trauma Centers as Level 1 through Level 4
- » The differences in levels are based on the amount of resources available to treat the patient
- » The differences are **not** based on quality of care – all Trauma Centers are required to have a commitment to the provision of high quality care.

Trauma Center
ACS Definition



- » **Level I** – A regional resource Trauma Center that must have the capability of providing total care for every aspect of injury, from prevention through rehabilitation. Level I Trauma Centers also have responsibility of providing leadership in education, research, and system planning.

Trauma Center Levels



- » **Level II** – A Trauma Center that provides initial definitive trauma care, regardless of the severity of the injury. Depending on location and available resources, Level II Trauma Centers may not be able to provide the same comprehensive care as a Level I Trauma Center. The Level II Trauma Center assumes responsibility for education and system leadership in areas where a Level I Trauma Center does not exist.

Trauma Center Levels



- » **Level III** – Level III Trauma Centers are meant to serve communities that do not have immediate access to a Level I or II Trauma Center. Level III Trauma Centers can provide prompt assessment, resuscitation, emergency operations and stabilization of the trauma patient, as well as arrange for possible transfer to a facility that can provide a higher level of definitive trauma care.

Trauma Center Levels



- » **Level IV** – Level IV Trauma Centers provide advanced trauma life support prior to patient transfer in remote areas where a higher level of care is not available.

Trauma Center Levels

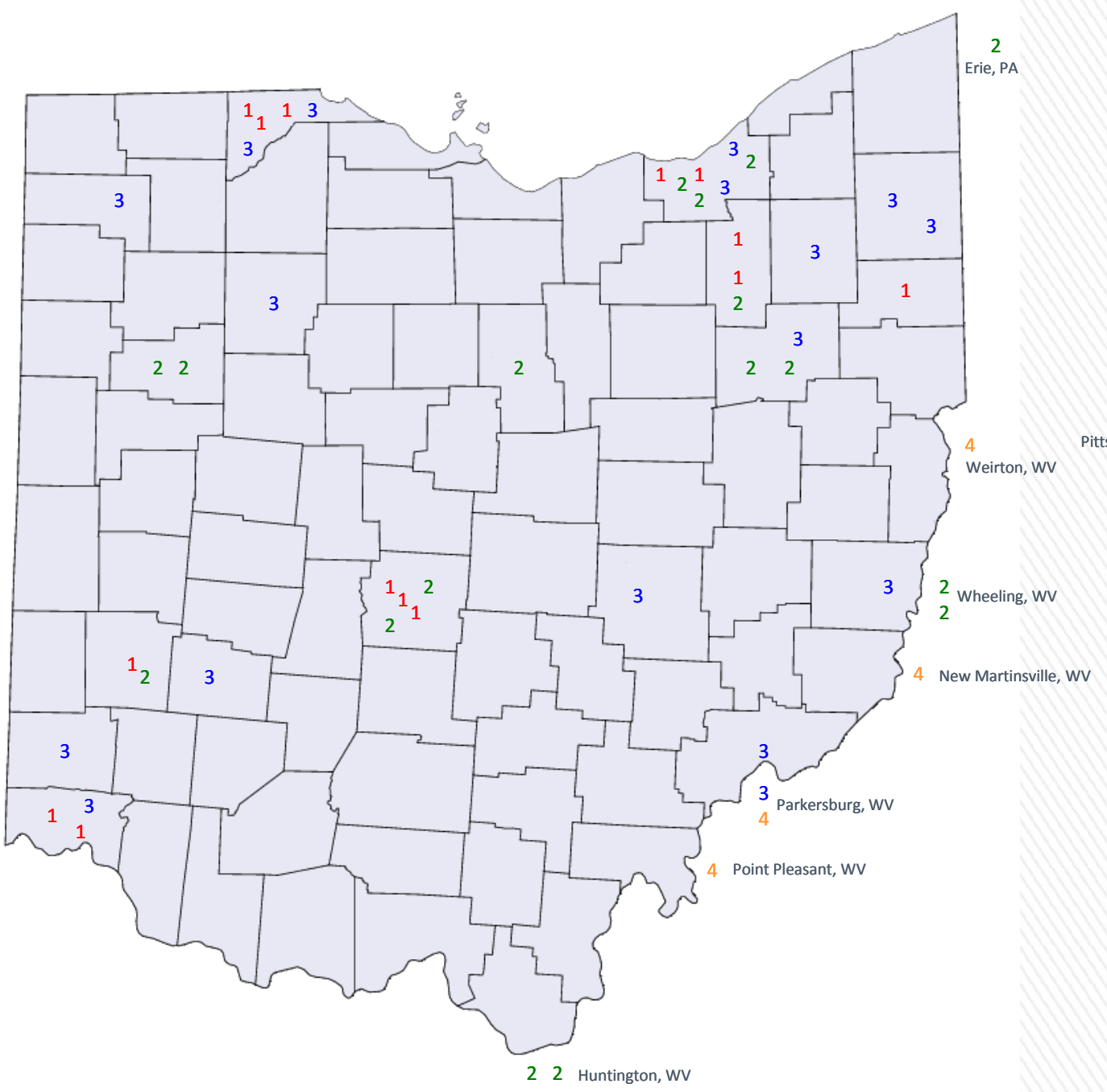


Ohio law *requires* that all trauma victims be transported directly to a Trauma Center.

There are five exceptions to this and will be discussed later.

Key Concept





2 2
Ft. Wayne, IN

2
Erie, PA

1 1 1 1
Pittsburgh, PA

4
Weirton, WV

2 2
Wheeling, WV

4
New Martinsville, WV

3 4
Parkersburg, WV

4
Point Pleasant, WV

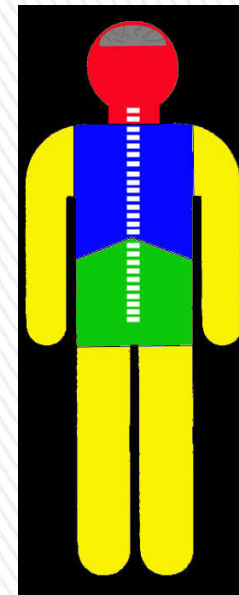
2 2
Huntington, WV

» Age groups

- > Pediatric: 0 – 15 years
- > Adult: 16 – 69 years
- > Geriatric: 70 years and older

» **Body region** means a portion of the trauma victim's body divided into the following areas:

- > Brain
- > Head, face and neck
- > Chest
- > Abdomen and pelvis
- > Extremities
- > Spine



Trauma Triage Definitions



- » **Evidence of neurovascular compromise** includes one or more of the following (“The 5 Ps”)
 - > Paresthesia (numbness/tingling)
 - > Pain (severe)
 - > Paralysis
 - > Pale
 - > Pulseless

- » **Evidence of poor perfusion** means one or more of the following:
 - > Weak distal pulses
 - > Pallor / paleness
 - > Cyanosis
 - > Delayed capillary refill (greater than 2 seconds)
 - > Tachycardia (appropriate for the patient’s age)

Trauma Triage Definitions



- » **Evidence of respiratory distress** includes one or more of the following:
 - > Stridor
 - > Grunting
 - > Retractions
 - > Cyanosis
 - > Hoarseness
 - > Difficulty speaking

- » **Evidence of traumatic brain injury** means signs of external trauma and physiologic indicators that the brain has suffered an injury caused by external force including, but not limited to
 - > Decrease in level of consciousness from the victim's baseline
 - > Unequal pupils
 - > Blurred vision
 - > Severe or persistent headache
 - > Nausea or vomiting
 - > Change in neurological status

Trauma Triage Definitions



- » **Proximal long bone** is the humerus or femur

- » **Seat belt sign** is bruises or abrasions on the chest and/or abdomen resulting from the use of a seat belt during a motor vehicle crash

- » **Signs and symptoms of spinal cord injury** include
 - > Paralysis
 - > Weakness
 - > Numbness / tingling

Trauma Triage Definitions



If an injured person has any of the following indicators, they should be transported directly to a Trauma Center.

Trauma Triage



Pediatric Anatomic Indicators

- » Penetrating injury to the head, neck or torso
- » Significant penetrating injury to the extremities, proximal to the knee or elbow, with neurovascular compromise
- » Visible crush of head, neck or torso
- » Abdominal tenderness, distention or seat belt sign
- » Flail chest
- » Pelvic fracture

Pediatric Trauma Triage >

Pediatric Anatomic Indicators

- » Injuries to the extremities with
Visible crush
or
Evidence of neurovascular compromise
- » Amputations proximal to the wrist or ankle
- » Fracture of 2 or more proximal long bones (humerus or femur)
- » Signs and symptoms of spinal cord injury
- » Serious burns
2nd or 3rd degree burns over more than 10% of total body surface area
or
Involving face, airway, hands, feet, genitalia

Pediatric Trauma Triage >

Pediatric Physiologic Indicators

- » Glasgow Coma Score of 13 or less
- » Loss of consciousness for greater than 5 minutes
- » Failure to localize pain (GCS motor score 4 or less)
- » Evidence of poor perfusion
 - Weak distal pulse, pallor, cyanosis, delayed cap refill, or tachycardia
- » Evidence of respiratory distress or failure
 - Stridor, grunting, retractions, cyanosis, hoarseness, difficulty speaking

Pediatric Trauma Triage >

Adult Anatomic Indicators

- » Penetrating injury to the head, neck or torso
- » Significant penetrating injury to the extremities, proximal to the knee or elbow, with neurovascular compromise
- » Visible crush of head, neck or torso
- » Abdominal tenderness, distention or seat belt sign
- » Flail chest
- » Pelvic fracture (this does not include isolated hip fractures)

Adult Trauma Triage



Adult Anatomic Indicators

- » Injuries to the extremities with
Visible crush
or
Evidence of neurovascular compromise
- » Amputations proximal to the wrist or ankle
- » Fracture of 2 or more proximal long bones (humerus or femur)
- » Signs and symptoms of spinal cord injury
- » Serious burns
2nd or 3rd degree burns over more than 10% of total body surface area
or
Involving face, airway, hands, feet, genitalia

Adult Trauma Triage



Adult Physiologic Indicators

- » Glasgow Coma Score of 13 or less
- » Loss of consciousness for greater than 5 minutes
- » Failure to localize pain (GCS motor score 4 or less)
- » Respiratory rate less than 10 or greater than 29
- » Requires endotracheal intubation
- » Requires relief of tension pneumothorax
- » Pulse rate greater than 120 with evidence of hemorrhagic shock
- » Systolic blood pressure less than 90 mm Hg

Adult Trauma Triage



Geriatric Indicators

Geriatric trauma indicators are similar to adult.

Differences are marked with an asterisk *

Geriatric Trauma Triage >

Geriatric Anatomic Indicators

- » Penetrating injury to the head, neck or torso
- » Significant penetrating injury to the extremities, proximal to the knee or elbow, with neurovascular compromise
- » Visible crush of head, neck or torso
- » Abdominal tenderness, distention or seat belt sign
- » Flail chest
- » Pelvic fracture (this does not include isolated hip fractures)
- » Injury sustained in two or more body regions*

Geriatric Trauma Triage



Geriatric Anatomic Indicators

- » Injuries to the extremities with
Visible crush
or
Evidence of neurovascular compromise
- » Amputations proximal to the wrist or ankle
- » Fracture of 2 or more proximal long bones (humerus or femur)
- » Signs and symptoms of spinal cord injury
- » Serious burns
2nd or 3rd degree burns over more than 10% of total body surface area
or
Involving face, airway, hands, feet, genitalia

Geriatric Trauma Triage >

Geriatric Physiologic Indicators

- » Glasgow Coma Score of 13 or less
- » Glasgow Coma Score less than 15 with a known or suspected traumatic brain injury*
- » Loss of consciousness for greater than 5 minutes
- » Failure to localize pain (GCS motor score 4 or less)
- » Respiratory rate less than 10 or greater than 29
- » Requires endotracheal intubation
- » Requires relief of tension pneumothorax
- » Pulse rate greater than 120 with evidence of hemorrhagic shock
- » Systolic blood pressure less than 100 mm Hg*

Geriatric Trauma Triage



Geriatric Mechanism Indicators

- » Fracture of 1 or more proximal long bones (humerus or femur) sustained in a motor vehicle crash*
- » Pedestrian struck*
- » Falls from any height – including standing – *with evidence of a traumatic brain injury**

Geriatric Trauma Triage >

Remember, if an injured person has any of the indicators just listed, they must be transported directly to a Trauma Center.

Trauma Triage



EMS personnel also must be concerned about *mechanism of injury & special considerations* when determining whether or not to transport to a Trauma Center.

These should be used as additional factors in decision making, not as stand-alone conditions that will triage a patient to a Trauma Center.

Trauma Triage



Mechanism of injury

» Motor vehicle crashes with:

- > Ejection
- > Rollover
- > Extrication greater than 20 minutes
- > Death in same passenger compartment
- > Evidence of high speed crash
 - + Speed greater than 40 miles per hour
 - + Major auto deformity (greater than 20 inches)
 - + Intrusion into passenger compartment greater than 12 inches

Trauma Triage



Mechanism of injury

- » Auto vs. pedestrian, greater than 5 mph.
- » Auto vs. bicycle, greater than 5 mph.
- » Motorcycle crash greater than 20 mph.
- » Motorcycle crash with rider separated from bike
- » Falls greater than 20 feet

Trauma Triage



Special Considerations

» Pregnancy

» Co-morbid conditions

- > Cardiac or respiratory disease
- > Liver or kidney disease
- > Insulin-dependent diabetes (Type 1)
- > Compromised immune system
 - + Cancer, HIV, Transplant
- > Bleeding disorders or on anti-coagulants
- > Morbidly obese

Trauma Triage



Ohio law *requires* that all trauma victims be transported directly to a Trauma Center.

There are five exceptions to this requirement...

Trauma Triage



» 5 Exceptions to mandatory transport

1. Medical necessity for initial assessment and stabilization
2. Unsafe or medically inappropriate due to adverse weather conditions or excessive transport time
3. It would cause a shortage of local EMS resources
4. No Trauma Center is able to receive and provide care to the patient without undue delay
5. Before transport begins, the patient (or parent/guardian) requests transportation to a hospital that is not a Trauma Center

5 Exceptions



1. It is medically necessary to transport the patient to a hospital without a Trauma Center for initial assessment and stabilization before transfer.

These must be legitimate, immediately life-threatening medical reasons.

- > Unable to open or maintain airway
- > Traumatic arrest
- > Uncontrollable external bleeding

EMS agency protocols should provide guidance on when this is appropriate

5 Exceptions



2. Unsafe or medically inappropriate due to adverse weather conditions or excessive transport time.

In cases of bad weather or when transport time to the nearest Trauma Center is excessive, a patient *may* be better served by stopping at the nearest hospital for stabilization and transfer.

- > Consider other methods of transport, such as air medical
- > Local and regional protocols should provide guidance on when this is appropriate
- > Use your best professional judgment

5 Exceptions



3. It would cause a shortage of local resources.

Many EMS jurisdictions have limited resources – equipment and/or personnel – to provide for the emergency medical needs of their community. If transporting to a Trauma Center causes a shortage of these resources, it *may* be better to transport to the closest hospital where transfer can be arranged.

Each community must assess its available resources, including air medical services and mutual aid, to understand when this exception applies.

5 Exceptions



4. No Trauma Center is able to receive and provide care to the patient without undue delay.

This exception was originally intended to address situations where Trauma Centers were diverting trauma patients. However, with today's mature state and regional trauma systems, this is mostly a thing of the past. Trauma Centers avoid trauma patient diversion.

If, for some unusual reason, a Trauma Center diverts your patient, you must use your best judgment, along with guidance from medical control, to determine the next best destination for your trauma patient.

5 Exceptions



5. Before transport of a trauma patient begins, the patient requests to be transported to a hospital that is not a trauma center.

This request may also be made by the parents / legal guardian of a trauma patient who is a minor, or by a legal representative of the patient.

Competent patients have the right to have input into where they will receive treatment, even if their choice is not the best clinical option. EMS personnel should attempt to convince the patient of the need for treatment at a trauma center but should respect the competent patient's wishes.

5 Exceptions



Other than excessive transport time, the use of any of the 5 exceptions should be just that – *exceptional*.

They should be non-routine, noteworthy events that might call for documentation as to why the patient was not taken to an appropriate hospital.

5 Exceptions



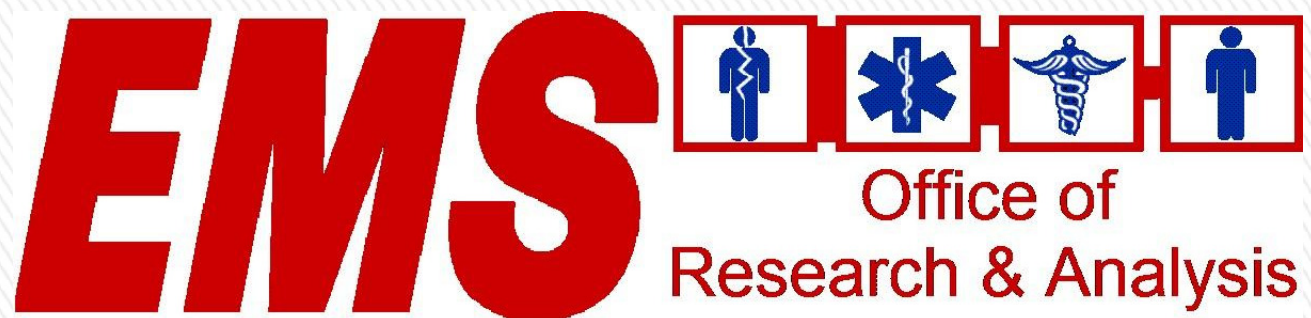
Final Note

When in doubt, transport to a
Trauma Center

Trauma Triage



Questions?



Trauma Triage

