WASHINGTON STATE: PREHOSPITAL TRAUMA TRIAGE DESTINATION PROCEDURE

EMS PROVIDER PRESENTATION

DOH 346-145

Office of Community Health Systems – Emergency Care System

Washington State Department of HEALTH

Contributors

Catie Holstein
EMS Director
WA State DOH

Joshua Corsa, MD
Medical Program Director
San Juan County

Tim Bax, MD
Trauma Medical Director
Sacred Heart Medical Center

Tim Orcutt, MSN, RN
ECS, Nurse Advisor
WA State DOH

Anthony Partridge, MPPA
Trauma Designation Program Manager
WA State DOH

Anne Oxenbridge, RN
Nursing Consultant
WA State DOH

Marc Muhr
Director
Clark County EMS

Lynn Wittwer, MD
Medical Program Director
Clark County

Joe Hoffman, MD
Medical Program Director
Mason County

Jason Norris
Prehospital EMS Liaison
WA State DOH

Dawn Felt
EMS Education/Training
WA State DOH

Scott Williams
EMS Program Support
WA State DOH

Objectives

- Describe the update process for the 2021 National Guideline for the Field Triage of Injured Patients
- Explain the new Washington State Prehospital Triage Destination Procedure adopted from the national guideline
- Discuss the changes from the 2011 WA State triage destination procedure
- Training aids
- Summary

Update

AMERICAN COLLEGE OF SURGEONS:

NATIONAL GUIDELINE FOR THE FIELD TRIAGE OF INJURED PATIENTS

Why a Guideline ?

RIGHT PATIENT,
RIGHT PLACE,
RIGHT TIME

ACHIEVE OPTIMAL PATIENT OUTCOMES THROUGH TRANSPORT TO MOST APPROPRIATE DESTINATION WITHIN THE TRAUMA SYSTEM

MINIMIZE VARIATION IN DESTINATION DECISIONS

Why an update ?

NEW RESEARCH AND EVIDENCE SINCE 2011 GUIDELINE

REDUCE TIME AND VARIATION IN MAKING DESTINATION DECISIONS

OPPORTUNITY TO REDUCE UNDER- & OVER-TRIAGE

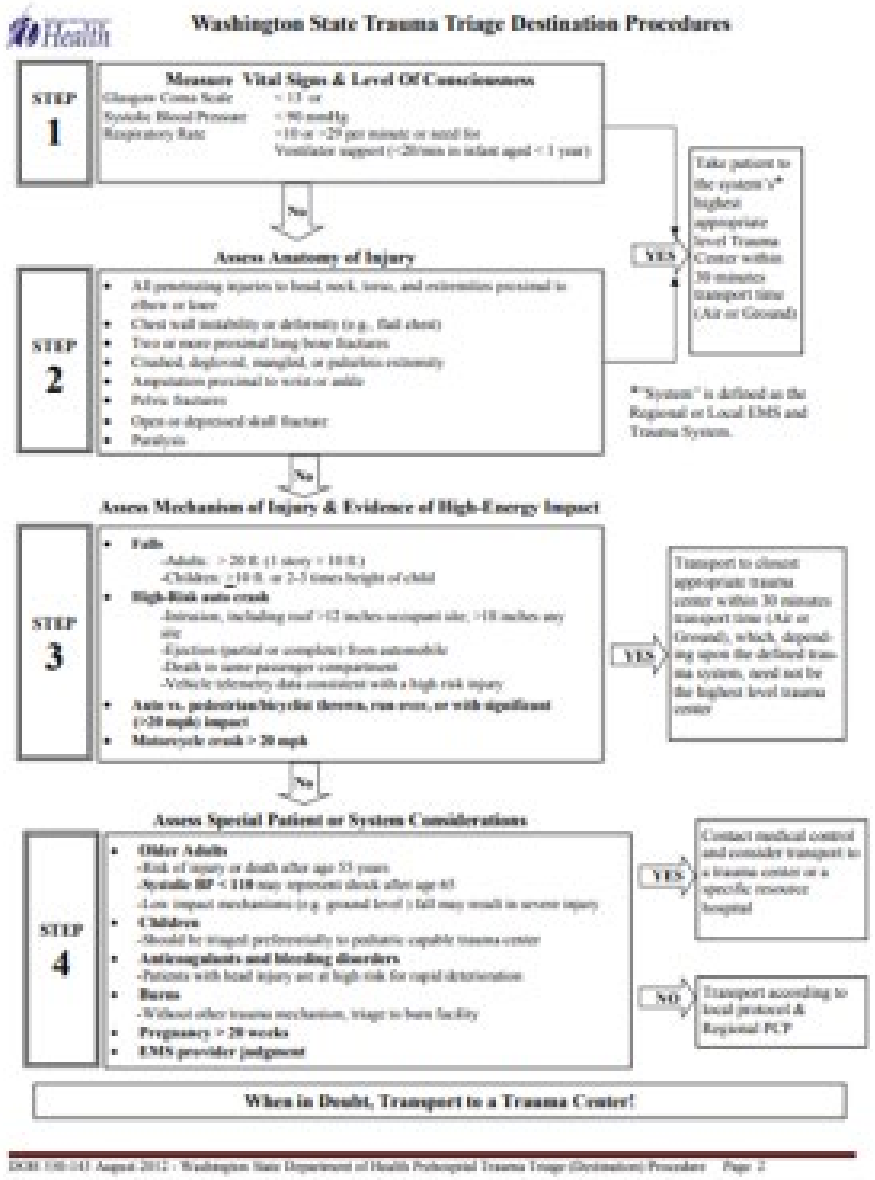
The Process

- Inclusion of EMS input
  - Survey distributed to 29 national organizations representing EMS and trauma
  - 3,958 Responses
- Interdisciplinary national Expert Panel
- Systematic reviews of EMS field triage and other relevant published literature
- Rigorous process for adding or removing criteria

New Guideline

WASHINGTON STATE:
PREHOSPITAL TRAUMA TRIAGE DESTINATION PROCEDURE

Prior Trauma Triage Destination Procedure 2012 - 2023



Washington State Trauma Triage Destination Procedures

STEP 1 — Measure Vital Signs & Level Of Consciousness

- Glasgow Coma Scale: < 13 or
- Systolic Blood Pressure: < 90 mmHg
- Respiratory Rate: <10 or >29 per minute or need for Ventilator support (<20/min in infant aged < 1 year)

→ YES: Take patient to the system's* highest appropriate level Trauma Center within 30 minutes transport time (Air or Ground)

No

STEP 2 — Assess Anatomy of Injury

- 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
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

→ YES: Take patient to the system's* highest appropriate level Trauma Center within 30 minutes transport time (Air or Ground)

*"System" is defined as the Regional or Local EMS and Trauma System.

No

STEP 3 — Assess Mechanism of Injury & Evidence of High-Energy Impact

- **Falls**
  - -Adults: > 20 ft. (1 story = 10 ft.)
  - -Children: ≥10 ft. or 2-3 times height of 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 injury
- **Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact**
- **Motorcycle crash > 20 mph**

→ YES: Transport to closest appropriate trauma center within 30 minutes transport time (Air or Ground), which, depending upon the defined trauma system, need not be the highest level trauma center

No

STEP 4 — Assess Special Patient or System Considerations

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

→ YES: Contact medical control and consider transport to a trauma center or a specific resource hospital

→ NO: Transport according to local protocol & Regional PCP

When in Doubt, Transport to a Trauma Center!

- Not an algorithm
- Intended to be read from:
  - Left to Right
  - Top to Bottom
- Simplified to align with information flow to EMS
- Reflect how assessments occur on the scene
- Gets to transport decision sooner
- Evidence along gradient of likelihood for serious injury

RED CRITERIA: High Risk for Serious Injury

INJURY PATTERNS

- Penetrating injuries to head, neck, torso, and proximal extremities
- Skull deformity, suspected skull fracture
- Suspected spinal injury with new motor or sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of two or more proximal long bones
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Active bleeding requiring a tourniquet or wound packing with continuous pressure

MENTAL STATUS AND VITAL SIGNS

All Patients
- Unable to follow commands (motor GCS < 6)
- RR < 10 or > 29 breaths/min
- Respiratory distress or need for respiratory support
- Room-air pulse oximetry < 90%

Age 0–9 years
- SBP < 70mm Hg + (2 x age in years)

Age 10–64 years
- SBP < 90 mmHg or
- HR > SBP

Age ≥ 65 years
- SBP < 110 mmHg or
- HR > SBP

YELLOW CRITERIA: Moderate Risk for Serious Injury

MECHANISM OF INJURY

- High-Risk Auto Crash
  - Partial or complete ejection
  - Significant intrusion (including roof)
    - >12 inches occupant site OR
    - >18 inches any site OR
    - Need for extrication for entrapped patient
  - Death in passenger compartment
  - Child (age 0–9 years) unrestrained or in unsecured child safety seat
  - Vehicle telemetry data consistent with severe injury
- Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)
- Pedestrian/bicycle rider thrown, run over, or with significant impact
- Fall from height > 10 feet (all ages)

EMS JUDGEMENT

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma service.

Trauma Triage Destination procedure

RED CRITERIA: High Risk for Serious Injury

INJURY PATTERNS

- Penetrating injuries to head, neck, torso, and proximal extremities
- Skull deformity, suspected skull fracture
- Suspected spinal injury with new motor or sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of two or more proximal long bones
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Active bleeding requiring a tourniquet or wound packing with continuous pressure

MENTAL STATUS AND VITAL SIGNS

All Patients

- Unable to follow commands (motor GCS < 6)
- RR < 10 or > 29 breaths/min
- Respiratory distress or need for respiratory support
- Room-air pulse oximetry < 90%

Age 0-9 years

- SBP < 70 mmHg + (2 x age in years)

Age 10-64 years

- SBP < 90 mmHg or
- HR > SBP

Age ≥ 65 years

- SBP < 110 mmHg or
- HR > SBP

Trauma Triage Destination procedure

YELLOW CRITERIA: Moderate Risk for Serious Injury

MECHANISM OF INJURY

- High-Risk Auto Crash
  - Partial or complete ejection
  - Significant intrusion (including roof)
    - >12 inches occupant site **OR**
    - >18 inches any site **OR**
    - Need for extrication for entrapped patient
  - Death in passenger compartment
  - Child (age 0-9 years) unrestrained or in unsecured child safety seat
  - Vehicle telemetry data consistent with severe injury
- Rider separated from transport vehicle with significant impact (e.g. Motorcycle, ATV, horse, etc.)
- Pedestrian/bicycle rider thrown, run over, or with significant impact
- Fall from height > 10 feet (all ages)

EMS JUDGEMENT

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma service.

New Trauma Triage Destination Procedure

DETAILED CHANGES FROM THE 2011 GUIDELINE

First Tier of Guideline: HIGH RISK

RED CRITERIA

High Risk for Serious Injury

Injury Patterns

- Penetrating injuries to head, neck, torso, and proximal extremities
- Skull deformity, suspected skull fracture
- Suspected spinal injury with new motor or sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of two or more proximal long bones
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Active bleeding requiring a tourniquet or wound packing with continuous pressure

Mental Status & Vital Signs

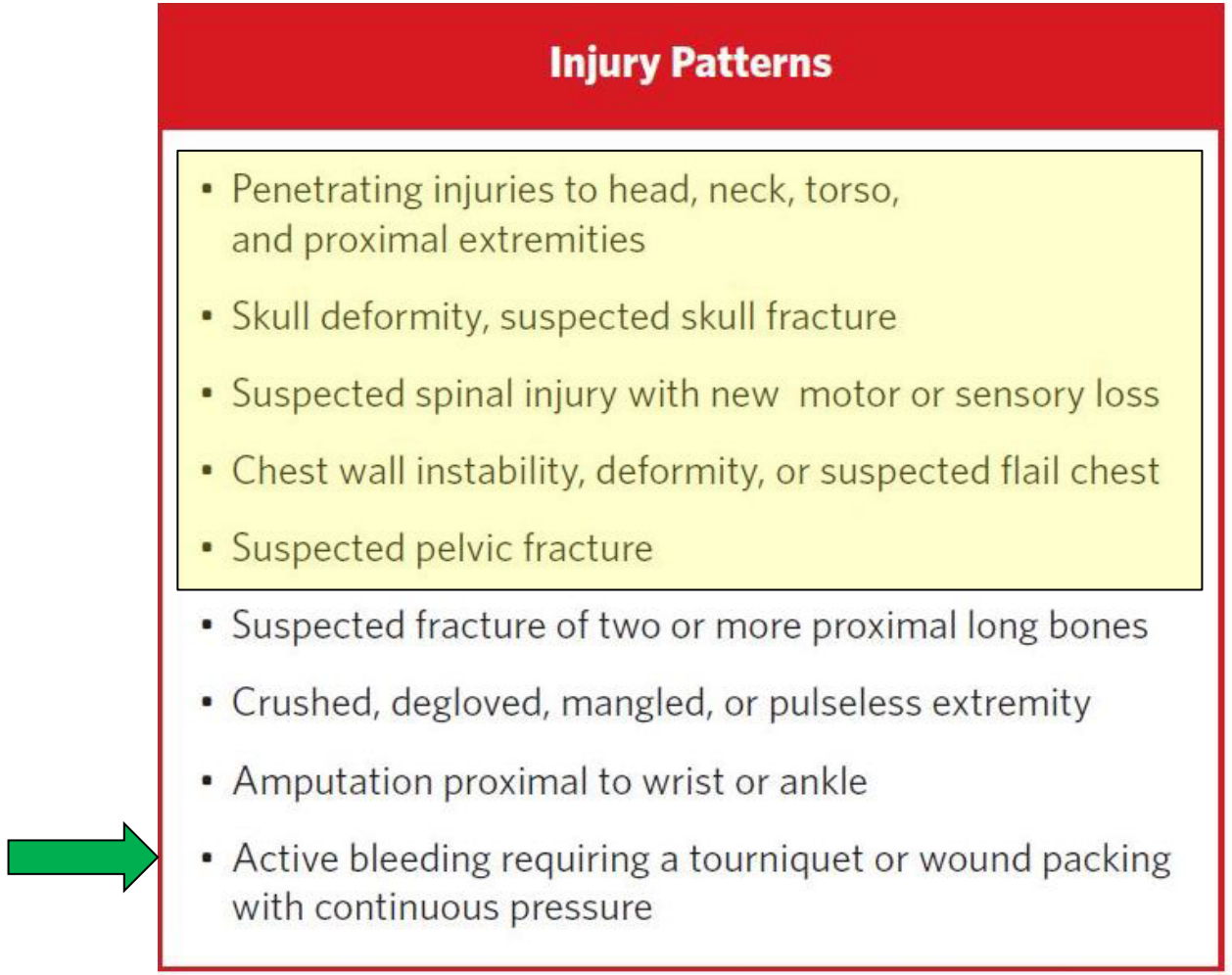
All Patients
- Unable to follow commands (motor GCS < 6)
- RR < 10 or > 29 breaths/min
- Respiratory distress or need for respiratory support
- Room-air pulse oximetry < 90%

Age 0–9 years
- SBP < 70mm Hg + (2 x age in years)

Age 10–64 years
- SBP < 90 mmHg or
- HR > SBP

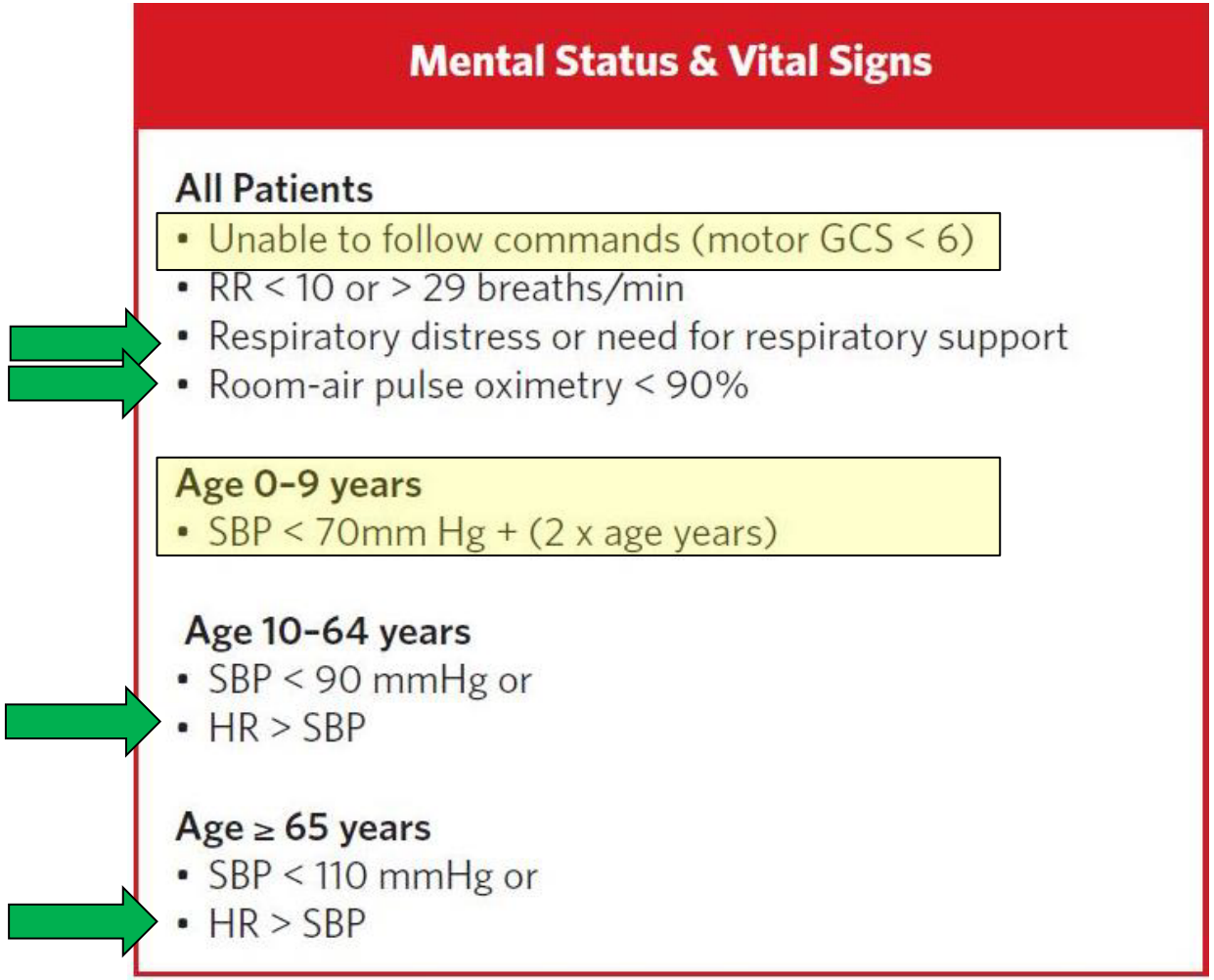
Age ≥ 65 years
- SBP < 110 mmHg or
- HR > SBP

INJURY PATTERNS: New/Updated

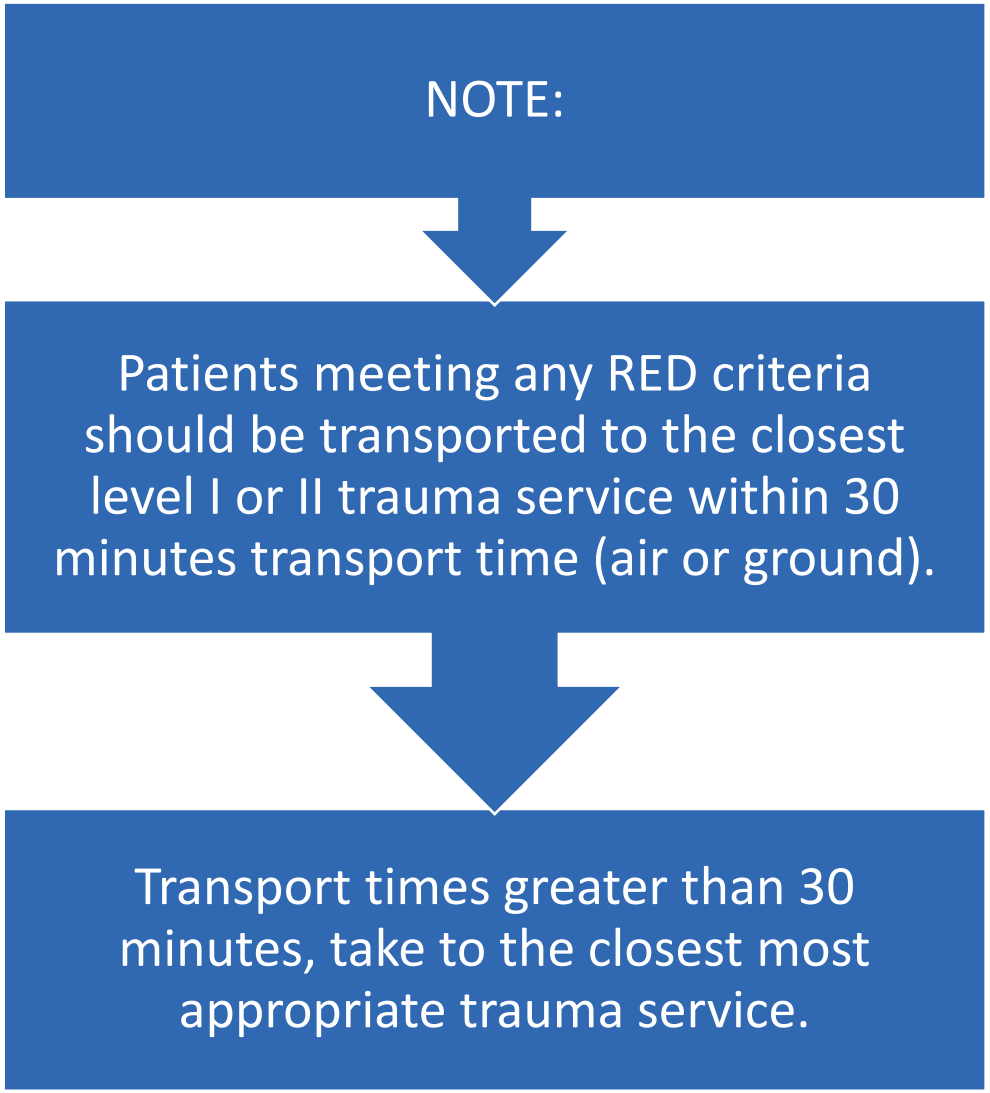


Age-related changes to vital signs have been added

MENTAL STATUS and VITAL SIGNS: New/Updated



RED CRITERIA:
Transport



Considerations

- If unable to maintain a patent airway, consider rendezvous with an Advanced Life Support (ALS) unit or transporting to the nearest facility capable of definitive airway management.
- The presence of specific injury patterns with normal vital signs, lack of pain, or normal levels of consciousness; require calling medical control and activating the trauma system.
- Pediatric patients meeting the red criteria should be preferentially triaged to designated pediatric trauma service.

Second Tier of Guideline: MODERATE RISK

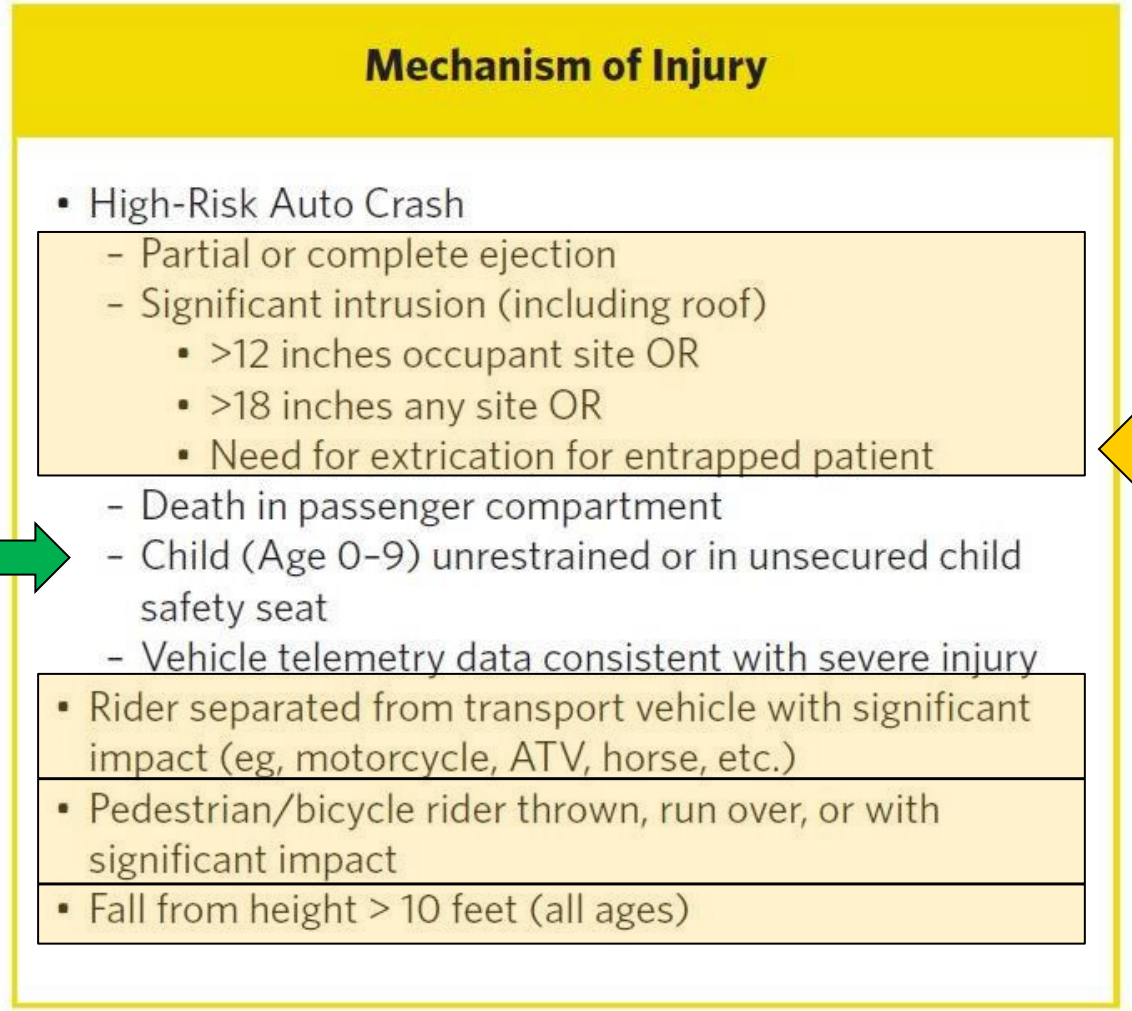
YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgment

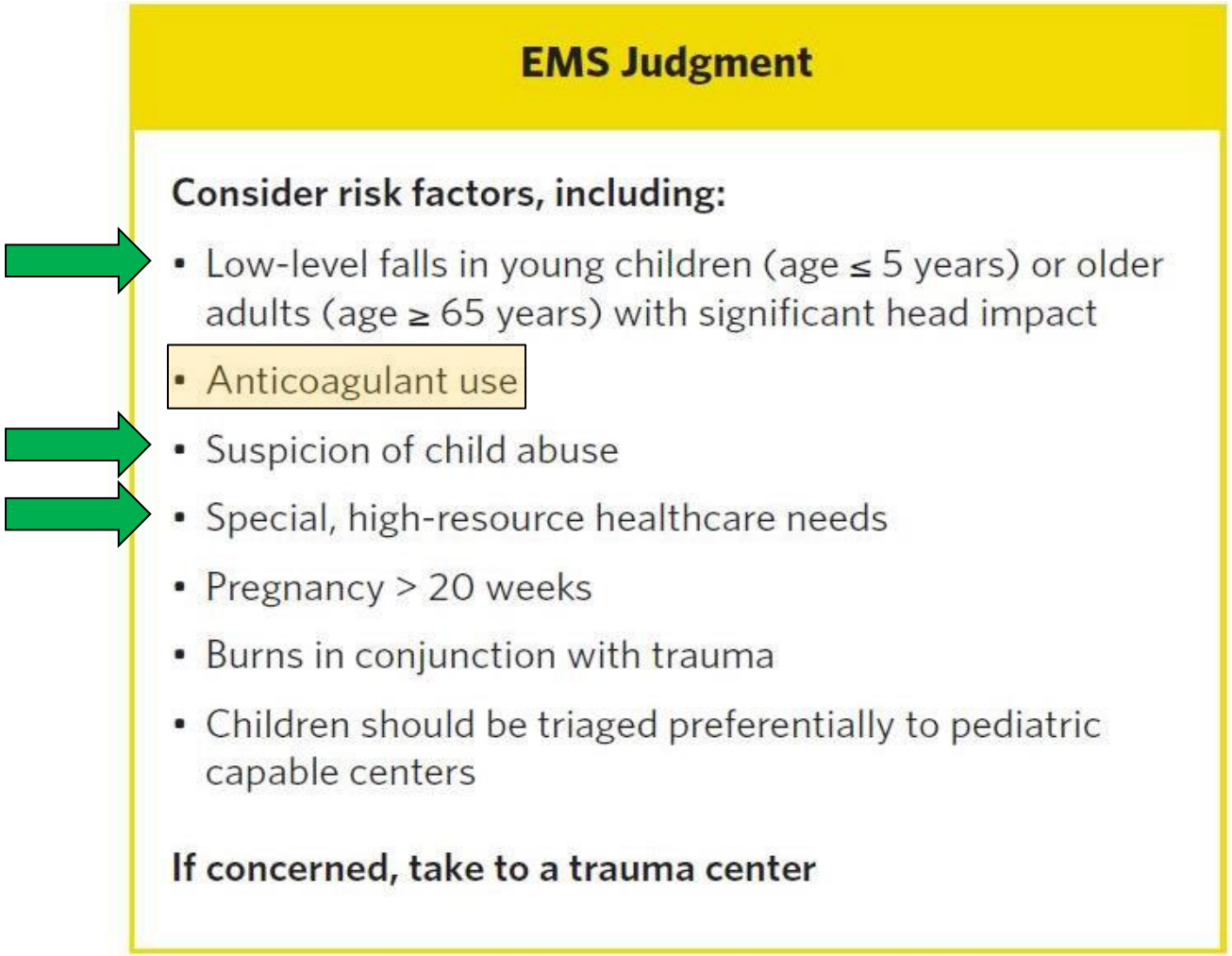
• High-Risk Auto Crash
  – Partial or complete ejection
  – Significant intrusion (including roof)
  • >12 inches occupant site OR
  • >18 inches any site OR
  • Need for extrication for entrapped patient
  – Death in passenger compartment
  – Child (age 0–9 years) unrestrained or in unsecured child safety seat
  – Vehicle telemetry data consistent with severe injury
• Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)
• Pedestrian/bicycle rider thrown, run over, or with significant impact
• Fall from height > 10 feet (all ages)
	Consider risk factors, including:
	• Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
	• Anticoagulant use
	• Suspicion of child abuse
	• Special, high-resource healthcare needs
	• Pregnancy > 20 weeks
	• Burns in conjunction with trauma
	• Children should be triaged preferentially to pediatric capable centers
	
	If concerned, take to a trauma center

MECHANISM OF INJURY: New/Updated

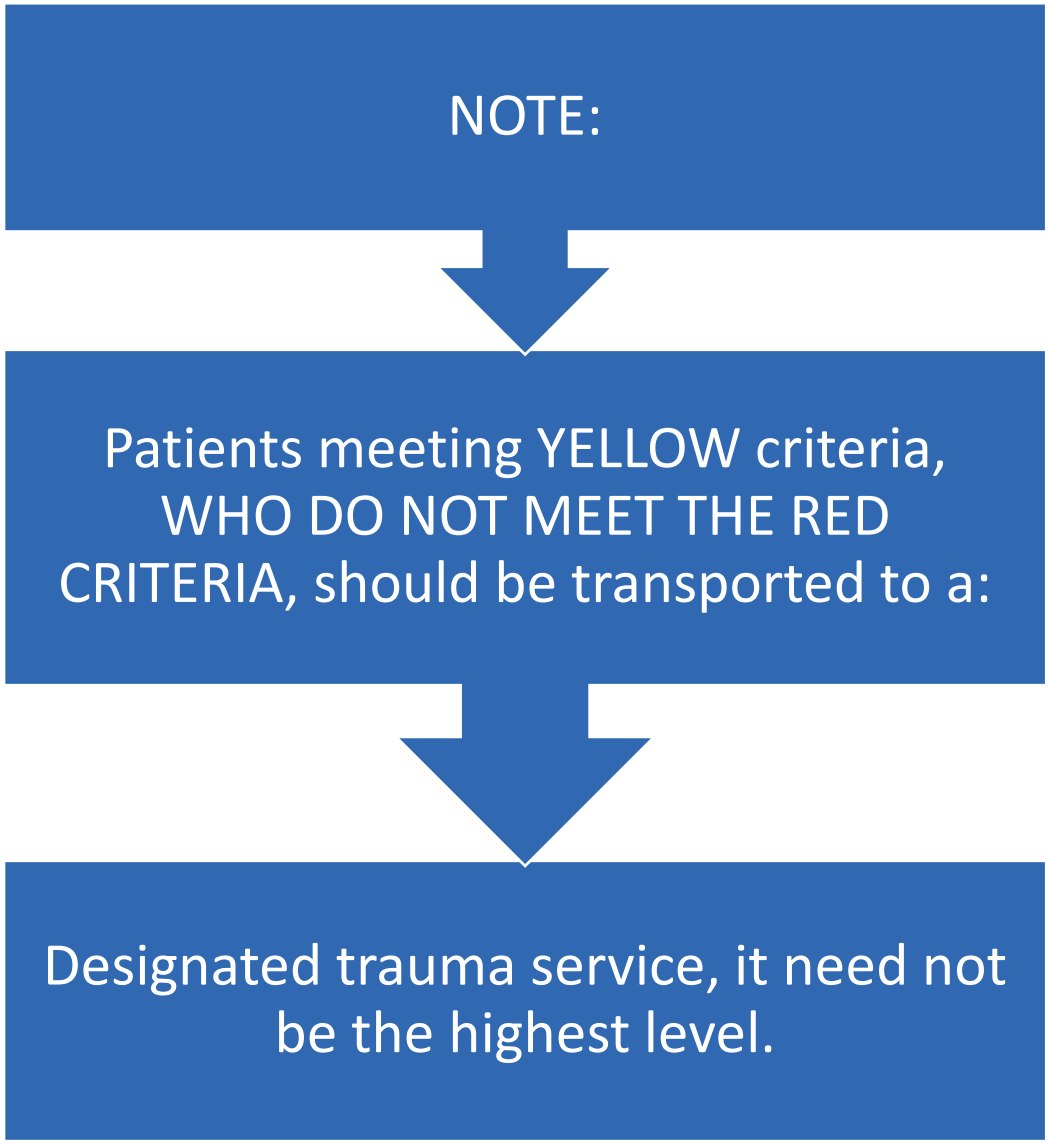


Extrication relates to entrapment, not simple confinement

EMS JUDGEMENT: New/Updated



YELLOW CRITERIA:
Transport



Considerations

- Risk factors coupled with "provider judgment" are reasons for the provider to contact Medical Control and discuss appropriate destinations for these patients.
- In some cases, the decision may be to transport to the nearest trauma service or a resource hospital.
- Patients with combined burns and trauma should be preferentially transported to a trauma center with burn care capability.
- Pediatric patients should be preferentially transported to a designated pediatric trauma service.

Training

CASE-BASED SCENARIOS

WASHINGTON STATE

Case-Based Triage Scenarios

Case-based triage scenarios were developed to demonstrate application of the Guideline.

Each case includes several discussion points, including the criterion demonstrated, system and resource considerations, bypass of other centers, ultimate patient destination, and transport mode considerations.

Notes for the presenter can be added on each slide to guide the discussion.

Washington State Developed Scenarios

Thanks to Dr. Lynn Wittwer, Marc Muhr, Dr. Joshua Corsa, Dr. Timothy Bax, and Dr. Joe Hoffman for contributing to the development and/or review of the Washington State training material.

Test Your Understanding

- Your patient is a 67-year-old male who sustained a fall of 12 feet off a ladder. Patient has a hematoma on his right occipital region; no loss of consciousness; no other signs of trauma
- Vital Signs:
  - Blood pressure-140/80
  - Heart Rate-110
  - RR-20
  - GCS-15

Decision Making

- Does this patient meet Trauma System Entry criteria?
- If YES, what color is reported to the hospital and what are our entry criteria?
- If NO, why?
- Review and discuss local protocols, County Operating Procedures, and Regional Patient Care Procedures for transport and destination facility considerations. Is ALS intercept a consideration for your agency?

Test Your Understanding

- Your patient is a 60-year-old male who sustained a ground level fall 2hrs prior to calling 911. Patient has no apparent trauma or complaints of pain. The patient takes Clopidogrel for atrial fibrillation.
- Vital Signs:
  - Blood pressure-100/60
  - Heart Rate-110
  - RR-20
  - GCS-15

Decision Making

- Does this patient meet Trauma System Entry criteria?
- If YES, what color is reported to the hospital and what are our entry criteria?
- If NO, why?
- Review and discuss local protocols, County Operating Procedures, and Regional Patient Care Procedures for transport and destination facility considerations. Is ALS intercept a consideration for your agency?

Test Your Understanding

- Your patient is a 60-year-old male who sustained a ground level fall 2hrs prior to calling 911. Patient complains of right hip pain and has a deformity. The patient takes no medication.
- Vital Signs:
  - Blood pressure-130/60
  - Heart Rate-88
  - RR-16
  - GCS-15

Decision Making

- Does this patient meet Trauma System Entry criteria?
- If YES, what color is reported to the hospital and what are our entry criteria?
- If NO, why?
- Review and discuss local protocols, County Operating Procedures, and Regional Patient Care Procedures for transport and destination facility considerations. Is ALS intercept a consideration for your agency?

Test Your Understanding

- Your patient is a 60-year-old male who sustained a ground level fall 2hrs prior to calling 911. Patient complains of right hip pain and has a deformity. The patient takes no medication.
- Vital Signs:
  - Blood pressure-80/40
  - Heart Rate-100
  - RR-16
  - GCS-15

Decision Making

- Does this patient meet Trauma System Entry criteria?
- If YES, what color is reported to the hospital and what are our entry criteria?
- If NO, why?
- Review and discuss local protocols, County Operating Procedures, and Regional Patient Care Procedures for transport and destination facility considerations. Is ALS intercept a consideration for your agency?

AMERICAN COLLEGE OF SURGEONS

Case-Based Triage Scenarios

[Training Materials | ACS (facs.org)]

Case-based triage scenarios were developed to demonstrate application of the Guideline.

Each case includes several discussion points, including the criterion demonstrated, system and resource considerations, bypass of other centers, ultimate patient destination, and transport mode considerations.

There are notes for the presenter on each slide to guide the discussion. The cases have been developed in two versions.

ACS Website and Training Link

Training Materials | ACS (facs.org)

- In parallel with the revision of the National Guideline for the Field Triage of Injured Patients, training materials have been developed for use in teaching field triage to new and practicing EMS professionals.

ACS Case-Based Triage Scenarios: Version One

- Intended for experienced EMS clinicians practicing within an established trauma system to maximize the practical application of the National Trauma Field Triage Guideline.
- This slide set emphasizes a discussion framing triage decision making within the context of the local EMS and trauma system in which the students practice.
- Two versions of these slides are available based on either an ABCD or MARCH primary survey to align with updated initial assessment in Version 2 of the NASEMSO Model EMS Clinical Guidelines.

ACS Case-Based Triage Scenarios: Version Two

- Intended to be used primarily with new EMS students to help them gain an understanding of how system resources may impact their decision making.
- This set of slides includes a mix of urban, suburban, and rural settings with hypothetical trauma and EMS system resources for students to consider when making triage decisions.
- Two versions of these slides are available based on either an ABCD or MARCH primary survey to align with updated initial assessment in Version 2 of the NASEMSO Model EMS Clinical Guidelines.

~

SUMMARY

Applying the Guideline

- This is a field triage guideline for prehospital use
- Not for mass casualties
- Know your local and regional trauma resources
- Follow local protocols on ALS intercept and air ambulance activation
- Sustain education and training
- Track use and outcomes through performance improvement

REMEMBER: Transport According to Local Protocol

QUESTIONS

To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.