

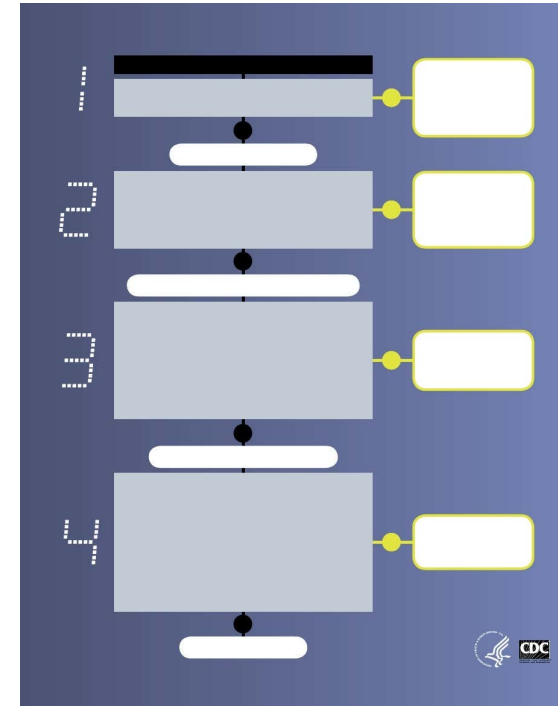


2021 Field Triage Guidelines



History of the Field Triage Guidelines

- ❑ 1976 ACS Optimal Resources Document
- ❑ 1987 ACS develops Field Triage Decision scheme
 - Updates in 1990, 1993, 1999: Expert consensus
- ❑ 2006 CDC leads multidisciplinary panel
 - Evidence-based review
 - Published in the MMWR in 2009
- ❑ 2011 CDC Expert Panel revision: Minor updates





2021 Revision process - Overview

- ❑ Systematic review of current FTG literature
 - Clearly defined thresholds for addition/deletion of criteria

- ❑ EMS input integral to revision process
 - Expanded expert panel
 - Direct feedback

- ❑ NHTSA funding/support





Committee Structures

❑ FTG Steering Committee

- PICO (patient, intervention, comparison, outcome) questions to guide the systematic reviews
- Initiated meetings 2 years in advance of the Expert Panel meeting

❑ National Expert Panel

- EMS clinicians, EMS physicians, emergency physicians, trauma surgeons, pediatric surgeons, nurses, EMS medical directors, experts in EMS training and education, EMS and trauma system administrators, researchers, and representatives from stakeholder organizations
- 12 national organizations represented



Systematic reviews

- ❑ New literature on field triage
- ❑ Controversial aspects of the guideline
- ❑ Opportunities for new or modified criteria
- ❑ Quality of the evidence



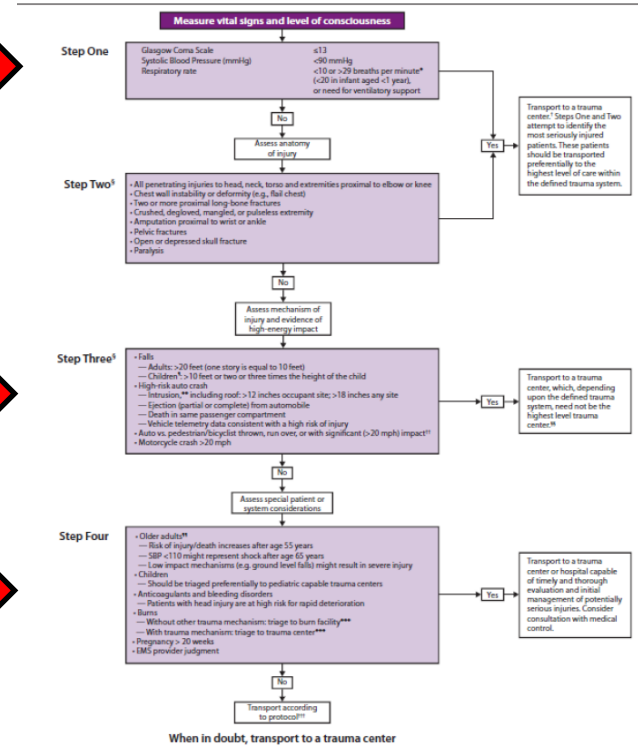
*Physiologic
criteria*



*Mechanism
of Injury*



*Special
considerations
criteria*





EMS Feedback

- ❑ EMS Subcommittee of ACS-COT
- ❑ Developed and piloted 40-question end-user feedback tool
- ❑ Distributed to 29 national organizations representing EMS
- ❑ Responses from 3,958 EMS clinicians

Open access

Original research

Trauma Surgery
& Acute Care Open

The national trauma triage protocol: how EMS perspective can inform the guideline revision

Peter E Fischer,¹ Mark L Gestring,² Scott G Sagraves,³ Holly N Michaels,⁴ Bhavin Patel,⁴ Jimm Dodd,⁴ Eric M Campion,⁵ Wayne E VanderKolk,⁶ Eileen M Bulger⁷

Fischer PE et al, Trauma Surgery Acute Care Open 2022





EMS feedback

- ❑ FTG are widely used by EMS in the U.S.
 - Prior versions seen to be overly complex
- ❑ Stepwise approach felt to be useful
 - But mechanism/injury is evaluated first and drives most decisions
 - “I see the wreck before I see the patient”
 - “I see the patient before I know the BP”



2021 Field Triage Guidelines

National Guideline for the Field Triage of Injured Patients

RED CRITERIA

High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA

Moderate Risk for Serious Injury

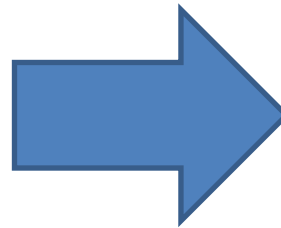
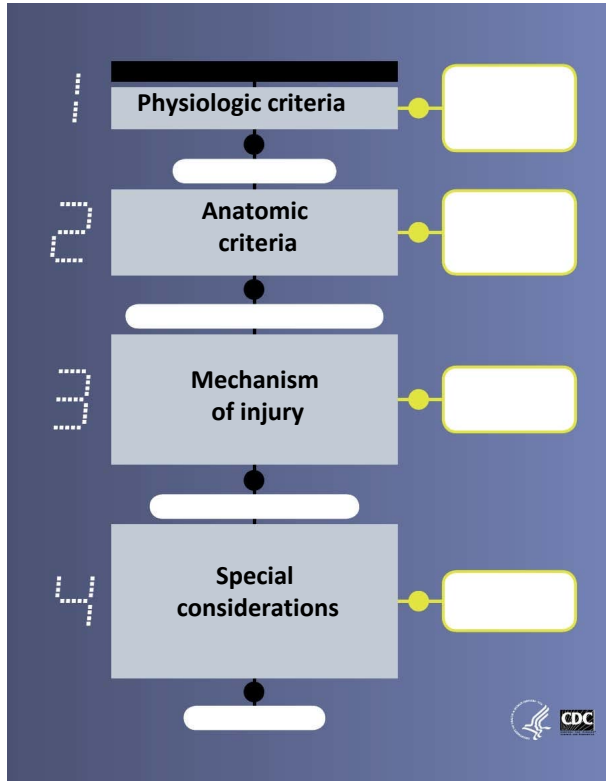
Mechanism of Injury	EMS Judgement

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

- ❑ Structure/format re-imagined
 - Align better with information flow to EMS
 - Align better with how FTGs were being used
- ❑ Consolidates criteria into two categories
 - High risk for serious injury
 - Moderate risk for serious injury



2021 Field Triage Guidelines



National Guideline for the Field Triage of Injured Patients

RED CRITERIA High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
Anatomic criteria now injury patterns	Updated physiologic criteria

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgement
Mechanism of injury	Special considerations focused on criteria prompting special attention by EMS

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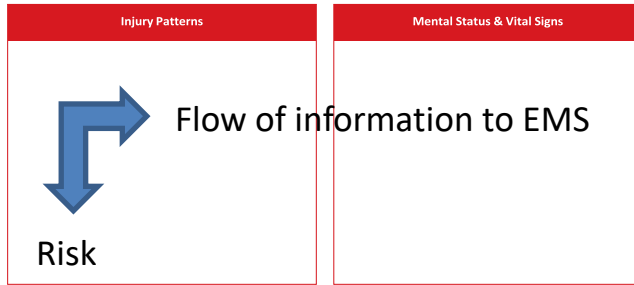




2021 Field Triage Guidelines

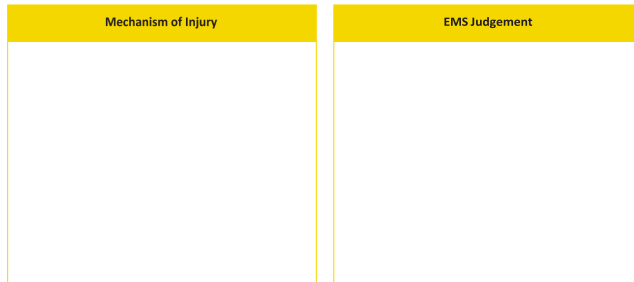
National Guideline for the Field Triage of Injured Patients

RED CRITERIA High Risk for Serious Injury



Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA Moderate Risk for Serious Injury



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- The guideline is intended to be read from top to bottom and from left to right



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Injury Patterns	Mental Status & Vital Signs
<ul style="list-style-type: none">• 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	<p>All Patients</p> <ul style="list-style-type: none">• 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% <p>Age 0-9 years</p> <ul style="list-style-type: none">• SBP < 70mm Hg + (2 x age years) <p>Age 10-64 years</p> <ul style="list-style-type: none">• SBP < 90 mmHg or• HR > SBP <p>Age ≥ 65 years</p> <ul style="list-style-type: none">• SBP < 110 mmHg or• HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

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Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgement
<ul style="list-style-type: none">• High-Risk Auto Crash<ul style="list-style-type: none">- Partial or complete ejection- Significant intrusion (including roof)<ul style="list-style-type: none">• >12 inches occupant site OR• >18 inches any site OR• Need for extrication for entrapped patient- Death in passenger compartment- Child (Age 0-9) unrestrained or in unsecured child safety seat<ul style="list-style-type: none">• 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)	<p>Consider risk factors, including:</p> <ul style="list-style-type: none">• 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 <p>If concerned, take to a trauma center</p>

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)





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National Guideline for the Field Triage of Injured Patients

RED CRITERIA **High Risk for Serious Injury**

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National Guideline for the Field Triage of Injured Patients

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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
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- 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 years)

Age 10-64 years

- SBP < 90 mmHg or
- HR > SBP

Age ≥ 65 years

- SBP < 110 mmHg or
- HR > SBP

☐ New for 2021

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☐ New for 2021



2021 Field Triage Guidelines

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgement
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Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)



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- EMS judgement section now includes factors that the expert panel felt were important to consider, but which lacked a robust and consistent evidence base



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Mechanism of Injury	EMS Judgement

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- ❑ Each risk category is aligned with recommendations for selection of a destination hospital



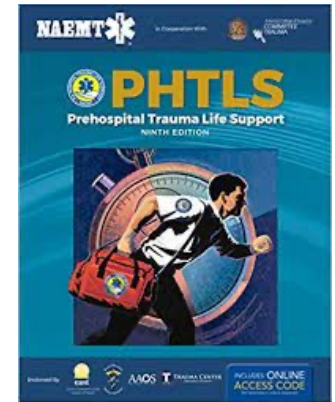
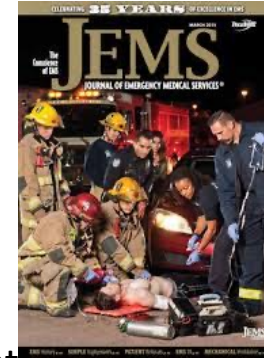
Transport recommendations

- ❑ Organized by risk of serious injury
 - Transport recommendations aligned with the level of risk
- ❑ No “one size fits all”
 - Account for regional differences
- ❑ Goal:
 - Patients meeting the “high risk” criteria should be triaged to the highest level trauma center within the region whenever possible
 - “Right patient, Right Place, Right time”



Dissemination

- ❑ Press releases
- ❑ Social media campaign
- ❑ EMS World presentation
- ❑ Trade periodicals (JEMS, Firehouse)
- ❑ Professional Organizations
- ❑ 10th Edition PHTLS
- ❑ NASEMSO Model EMS Guidelines
- ❑ Regional NHTSA Offices
 - Encourage highway safety offices to partner with state EMS offices in dissemination and adoption of this updated countermeasure





Education

- Video and written materials
- Case-based scenarios
- Customizable for specific trauma systems
- Developed for new providers and continuing education





Education

End Show Tips Use Slide Show
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Next slide

CASE 1

Dispatch info: Passenger vehicle rear-end collision into Garbage truck, unknown injuries

Scene size up: SUV with damage as shown. Middle-aged male driver restrained, still in vehicle.

Initial Thoughts?

Slide 6 of 35

Discussion Points: Consider the following based on your specific EMS and trauma system resources and geographic constraints

Criterion demonstrated – Shock Index >1 (e.g. HR>SBP):
 HR 124, SBP 96 → RED criterion, should go to highest level trauma center available

- System & resource considerations –
- Bypass other centers –
- Patient destination –
- Transport mode –

A A

will ask you patient to assess and make a triage decision or not intended for MCI tags.

is developed using the best available evidence to identify a likely benefit from the resources of a trauma center. Trauma local trauma triage protocols based on your triage.

What are the resources and structure of your local trauma system?

- Trauma centers of each local and transport (trauma) center
- Local non-trauma center hospitals
- All medical services and able to respond & arrive on scene
- Other available coverage & need for mutual aid
- Geographic constraints or other unique resources and challenges

Dispatch info: Passenger vehicle rear-end collision into Garbage truck, unknown injuries

Scene size up: SUV with damage as shown. Middle-aged male driver restrained, still in vehicle.

Primary survey:

- A – Assessing your questions when you approach
- B – Regular, not restrained
- C – Rapid initial exam, vital signs
- D – Following commands, confused about where he is & what happened

Discussion Points: Consider the following based on your specific EMS and trauma system resources and geographic constraints

Criterion demonstrated – Shock Index >1 (e.g. HR>SBP):
 HR 124, SBP 96 → RED criterion, should go to highest level trauma center available

System & resource considerations –

Bypass other centers –

Patient destination –

Transport mode –





Quality Measures



Candidate Measures	Description
NEMSQA Trauma-04: Trauma Patients Transferred to Trauma Center	Percentage of EMS responses originating from a 911 request for patients who meet CDC criteria for trauma and are transported to a trauma center
FL-FAIR Trauma-14: Trauma Call Rate	Percentage of EMS transports originating from a 911 request for patients meeting Step 1 or Step 2 prehospital field triage criteria for trauma during which a pre-arrival trauma alert is initiated.
Trauma Patients Transported to Highest Level Trauma Center (stratified by distance to trauma center)	<ol style="list-style-type: none">1) Percentage of EMS transports originating from a 911 request for patients meeting ACS prehospital field triage (Red) criteria for trauma transported to a Level I or II Trauma Center, and1) Percentage of same patients <i>NOT</i> transported to LI or II center, stratified by distance from injury location to LI or II center.





2021 Field Triage Guidelines - Highlights

- ❑ FTG now with new structure/format
 - Revised to reflect information flow to EMS
 - More consistent with how FTG are currently being used

- ❑ Revisions based on rigorous process for review of current evidence, expanded expert input and EMS feedback

- ❑ Risk categories aligned with recommendations for destination hospital



2021 Field Triage Guidelines - Highlights

- Focus now on dissemination and education
- New quality measures to assess effectiveness
- EMS/End user feedback was critical to revision process



❑ FTG Steering committee/Slide credits:

- Craig Newgard, MD, MPH
- Peter Fischer, MD
- Mark Gestring, MD
- Eileen Bulger, MD
- Holly Michaels, MPH
- Mackenzie Dafferner, MPH