

**Suffolk County  
Regional Emergency Medical Advisory Committee  
and Regional Trauma Advisory Committee  
Trauma Triage  
Educational Program for EMS Providers**

**September 1, 2023**



**Suffolk  
REMAC**  
Suffolk Regional Emergency Medical Advisory Committee



# Introduction

- Brief overview of the NYS Trauma System and of the Collaborative EMS Protocols for Trauma
- Review of the American College of Surgeons National Guidelines for the Field Triage of Injured Patients
- Review of the use of Air Medical Transport
- Listing of the current Trauma Centers in the geographical area
- Case Scenarios

# Introduction

- This is a collaborative effort on the part of the Suffolk County Regional Medical Advisory Committee (REMAC), the Suffolk County Regional Trauma Advisory Committee (RTAC), and the Suffolk County EMS Division

# New York State Trauma System

- Designation of Trauma Centers by the New York State Department of Health (NYS DOH)
- New York State Code, Rules, and Regulations – Title 10 Section 405.45 Trauma Centers
- Verification of Trauma Centers by the American College of Surgeons Committee on Trauma (ACS COT)
- Resources for Optimal Care of the Injured Patient 2022 Standards document – “The Gray Book”

# New York State Trauma System

- General Provisions
- (1) The Department may designate a hospital as a designated trauma center if the hospital demonstrates that it has met the requirements of section 3066 of the Public Health Law and this Part, to the Department's satisfaction.
- (2) Only those hospitals designated as trauma centers by the Department shall admit and provide trauma care to trauma patients;.....
- (3) Any hospital not designated as a trauma center that receives a trauma patient shall transfer such patient to the most appropriate trauma center pursuant to a transfer agreement as required under section 405.19 of this Part.....
- (4) No hospital shall state that it has trauma center status unless so designated by the Department.

<https://regs.health.ny.gov/volume-c-title-10/58637069/section-40545-trauma-centers>

# New York State Trauma System

- There are three levels of trauma center verification, each defined by specific standards. These standards denote the spectrum of care that must be available to the injured patient at the facility, along with other expectations related to research and educational contributions to advance the field and increase capacity.

# New York State Trauma System

- Levels of trauma care are not intended as a ranking of medical care but instead represents the resources available to care for patients with differing needs—from the most complex multisystem trauma patient to those with mild or moderate single-system injuries.
- Each trauma center has an important role in its community and a critical function in the trauma system. The ACS COT expects trauma centers' commitment to quality care to be the same regardless of level.
- Trauma centers must adhere to the standards outlined in the Resources Manual based on their level of verification.

# New York State Trauma System

**Level I** trauma centers must be capable of providing system leadership and comprehensive trauma care for all injuries. In its central role, a Level I trauma center must have adequate depth of resources and personnel. Most Level I trauma centers are university-based teaching hospitals due to the resources required for patient care, education, and research. In addition to providing acute trauma care, these centers have an important role in local trauma system development, regional disaster planning, increasing capacity, and advancing trauma care through research.



# New York State Trauma System

**Level II** trauma centers are expected to provide initial definitive trauma care for a wide range of injuries and injury severity and may take on additional responsibilities in the region related to education, system leadership, and disaster planning.

# New York State Trauma System

**Level III** trauma centers typically serve communities that may not have timely access to a Level I or II trauma center and fulfill a critical role in much of the United States by serving more remote and/or rural populations. Level III trauma centers provide definitive care to patients with mild to moderate injuries, allowing patients to be cared for closer to home. These centers also have processes in place for the prompt evaluation, initial management, and transfer of patients whose needs might exceed the resources available.

# New York State Collaborative Protocols

- Adopted by Suffolk County REMAC effective 1/15/2023
- Updated to the most recent version 23.1 by New York State on 2/15/2023
- Please read through the entire NYS Collaborative Protocol document
- Please review the Suffolk County REMAC regional policies document
- These are just a few educational comments on the 13 trauma protocols and are not comprehensive

# Trauma General

- Applies to adult and pediatric patients
- Patients with an unmanageable airway go to the closest hospital (regardless of the hospital's capabilities or if they are a trauma center)
- Unstable patients should have transport initiated to the appropriate hospital/landing zone within 10 minutes of patient access/extrication = the Platinum 10 Minute Concept...

# Amputation

- Stony Brook University Hospital is the only hospital in Suffolk County with a replantation program/team of surgeons and if there is any question about an amputated limb/near amputation proximal to the wrist or ankle then the patient should be preferentially transported to Stony Brook
- Contact Medical Control if there is any uncertainty
- Please remember to send the amputated part with the patient if it is available wrapped in moistened sterile dressing/gauze, placed in a water-tight bag/container and then on ice – but avoid freezing the body part
- Do not delay transport to search for the amputated body part

# Avulsed Tooth

- Attempt at reimplantation into the socket after rinsing the tooth with sterile water
  - You may need to suction out/remove a clot that has formed in the socket before reimplantation
- Once reimplanted, have the patient hold the tooth in place with their fingers and gentle jaw pressure by closing the mouth
- Or transport the avulsed tooth in a storage media, milk or saline
- Applies to adult and pediatric patients however do not attempt to reimplant a deciduous (baby) tooth which has no roots

# Bleeding/Hemorrhage Control

- Regular gauze may be used or hemostatic gauze application with direct pressure (kaolin or chitosan)
- Wound packing with pressure into the wound (especially in the neck torso back or abdomen)
- Pressure bandage (if you can wrap it around a limb, but not around the neck)
- Tourniquet application
  - 2 to 3 inches proximal to the wound
  - You may opt for application “high” on the proximal affected limb
  - Insure that the tourniquet is tight enough to occlude all blood flow distally
  - Do not place a tourniquet over a joint
  - Do not remove a tourniquet once applied (it may stay in place for up to 2 hours)
  - Consider pain medication administration if an ALS provider and the patient has a normal blood pressure
  - You may place a second tourniquet proximal to the first tourniquet if bleeding is not controlled
- Junctional tourniquets are approved for use in Suffolk County by REMAC

# Burns

- Attention to the ABCs and consider smoke inhalation injury and/or Carbon Monoxide exposure if the situation warrants
- Remove all clothing and jewelry
- Assess the location and degree of burn as 1<sup>st</sup> 2<sup>nd</sup> or 3<sup>rd</sup> degree
  - 1<sup>st</sup> degree is red like a sunburn
  - 2<sup>nd</sup> degree is red with blisters
  - 3<sup>rd</sup> degree is leathery/waxy
- Only count 2<sup>nd</sup> and 3<sup>rd</sup> degree in the determination of Total Body Surface Area burned
- Estimate the TBSA burned with the Rule of 9s (and the palm plus digits of one of the patient's hands is 1%)
- Cover burns with a dry sterile dressing
- Consider pain management if the patient is hemodynamically stable and you are an ALS provider
- Patients with burns should be transported to a Trauma Center unless the burn is minor and there is no associated traumatic injury
- Burns in conjunction with trauma should be transported to a Trauma Center



# Burns

- The American College of Surgeons recommends transfer to a designated burn center for any patient with an acute burn with any of the following:
  - 2<sup>nd</sup> degree burns of > 20% TBSA in patients ages 10 to 50
  - 2<sup>nd</sup> degree burns of > 10% TBSA in patients < age 10 or > age 50
  - 3<sup>rd</sup> degree burns of > 5% TBSA
  - Burns to the hands, face, feet, genitalia or major joints
  - Electrical burns
  - Chemical burns
  - Inhalation/Airway burns
- These patients in all likelihood will meet the Red Criteria for transport to the highest level Trauma Center in the system
- Please be aware that Stony Brook University Hospital is the only regional Burn Center in Suffolk County in addition to being a Level 1 Adult and Level 1 Pediatric Trauma Center
- Contract Suffolk County Medical Control if there is any question about the destination decision for patients with burns

# Chest Trauma

- Apply an occlusive dressing with 3 sided tape or an Asherman dressing
- If the patient is in cardiac arrest and has signs of chest/multi-system trauma, the EMT-CC and EMT-Paramedic may perform bilateral chest needle decompression procedures in addition to CPR and other life saving measures
- If the patient is not in cardiac arrest, but has signs of hemodynamic compromise and has signs of a tension pneumothorax, the EMT-Paramedic may perform a needle decompression on the effected side under standing orders
  - The EMT-CC is required to contact Medical Control for authorization to perform a needle decompression
  - Signs of a tension pneumothorax include absent lung sounds on one side of the chest, extreme dyspnea, jugular vein distension, cyanosis, and tracheal deviation away from the effected side
  - Signs of hemodynamic compromise include hypotension, narrowed pulse pressure and tachycardia
  - Thoracic decompression should be performed with a > 3 inch long 14 G reinforced IV catheter that is meant for this purpose and will not bend easily and should be performed anteriorly at the second intercostal space in the midclavicular line
  - All ALS providers are encouraged to review the procedure with their agency leadership and their agency medical director

# Eye Injuries

- Tetracaine eye drops are not authorized by Suffolk County REMAC at this time
- Chemical burns to the eyes should be irrigated with 20 minutes of tap water irrigation or saline

# Musculoskeletal Trauma

- Applies to adult and pediatric patients
- Manually stabilize the injured extremity above and below the site of injury
- If the distal extremity is cyanotic, or lacks a pulse, or if a long bone is severely deformed, align the extremity by applying gentle manual traction prior to splinting
- Assess the distal pulse, motor, and sensory function before and after splint application
- Traction splinting may be indicated for a suspected mid-shaft femur fracture if there is no suspected injury to the pelvis, knee, lower leg or ankle on the same side
- Application of a pelvic binder may be indicated if the patient has a potential unstable pelvic fracture

# Patella Dislocation

- With a kneecap dislocation either to the outside or inside of the knee, the EMS provider may extend the knee while a second EMS provider applies manual pressure on the patella to relocate it into the midline position
- For any unclear situations or if the relocation is unsuccessful, splint the lower extremity in position
- Patients should be transported to the hospital after a successful relocation by EMS (for an xray and a reevaluation as there is a risk of recurrent dislocation)
  - Please contact Suffolk County Medical Control for the RMA if the patient wants to refuse transport

# Shock – Adult: Trauma Associated Shock

- Suffolk County REMAC does not authorize the administration of Tranexamic Acid (TXA) in the field at this time
- Suffolk County REMAC does not authorize EMS to administer blood transfusion in the field at this time

# Selected Spinal Injuries

- Applies to adult and pediatric patients with a blunt mechanism of injury
- If the patient meets the criteria for transport to a Trauma Center, the patient should have spinal motion restriction provided
  - A properly fitted cervical collar
  - Spinal motion restriction (the patient is logrolled and moved with limited movement of the spine)
  - Rigid backboards may or may not be utilized for this purpose depending on the situation
- If the patient does not meet any of the Red or Yellow Criteria for transport to a Trauma Center, but the patient has a complaint of neck and/or back pain, has tenderness to palpation over the spine, has weakness tingling or numbness in the trunk or limbs, or has a painful distracting injury – then the patient should be placed in a properly fitted cervical collar and have spinal motion restriction performed and taken to the closest appropriate hospital

# The American College of Surgeons National Guidelines

The ACS has published the National Guidelines for the Field Triage of Injured Patients

These Guidelines were adopted by New York State on 2/15/2023 for use by all EMS providers of all levels

These Guidelines are meant to serve as a means of achieving optimal patient outcomes through prehospital transportation of injured persons to the most appropriate destination within the trauma system

These National Guidelines shall be implemented in conjunction with regional policies and protocols so that the right patient is taken to the right place at the right time



# Time is ticking.....

- The Golden Hour Concept

- The best patient outcomes and survivability will be observed if the time from injury to reaching definitive care at the trauma center is less than one hour

- The Platinum 10 Minute Concept

- The EMS On-Scene time should be limited to 10 minutes if possible (understanding that there may be issues of extrication or access to the patient)

- The trauma patient who has a dangerous mechanism of injury, a decreased level of consciousness, airway compromise or respiratory difficulty or is displaying signs of shock should be transported to the trauma center as rapidly as possible

# National Guideline for the Field Triage of Injured Patients

## National Guideline for the Field Triage of Injured Patients

### RED CRITERIA

#### High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
<ul style="list-style-type: none"> <li>• Penetrating injuries to head, neck, torso, and proximal extremities</li> <li>• Skull deformity, suspected skull fracture</li> <li>• Suspected spinal injury with new motor or sensory loss</li> <li>• Chest wall instability, deformity, or suspected flail chest</li> <li>• Suspected pelvic fracture</li> <li>• Suspected fracture of two or more proximal long bones</li> <li>• Crushed, degloved, mangled, or pulseless extremity</li> <li>• Amputation proximal to wrist or ankle</li> <li>• Active bleeding requiring a tourniquet or wound packing with continuous pressure</li> </ul>	<p><b>All Patients</b></p> <ul style="list-style-type: none"> <li>• Unable to follow commands (motor GCS &lt; 6)</li> <li>• RR &lt; 10 or &gt; 29 breaths/min</li> <li>• Respiratory distress or need for respiratory support</li> <li>• Room-air pulse oximetry &lt; 90%</li> </ul> <p><b>Age 0-9 years</b></p> <ul style="list-style-type: none"> <li>• SBP &lt; 70mm Hg + (2 x age years)</li> </ul> <p><b>Age 10-64 years</b></p> <ul style="list-style-type: none"> <li>• SBP &lt; 90 mmHg or</li> <li>• HR &gt; SBP</li> </ul> <p><b>Age ≥ 65 years</b></p> <ul style="list-style-type: none"> <li>• SBP &lt; 110 mmHg or</li> <li>• HR &gt; SBP</li> </ul>

*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 Judgment
<ul style="list-style-type: none"> <li>• High-Risk Auto Crash               <ul style="list-style-type: none"> <li>- Partial or complete ejection</li> <li>- Significant intrusion (including roof)                   <ul style="list-style-type: none"> <li>• &gt;12 inches occupant site OR</li> <li>• &gt;18 inches any site OR</li> <li>• Need for extrication for entrapped patient</li> </ul> </li> <li>- Death in passenger compartment</li> <li>- Child (Age 0-9) unrestrained or in unsecured child safety seat</li> <li>- Vehicle telemetry data consistent with severe injury</li> </ul> </li> <li>• Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)</li> <li>• Pedestrian/bicycle rider thrown, run over, or with significant impact</li> <li>• Fall from height &gt; 10 feet (all ages)</li> </ul>	<p><b>Consider risk factors, including:</b></p> <ul style="list-style-type: none"> <li>• Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact</li> <li>• Anticoagulant use</li> <li>• Suspicion of child abuse</li> <li>• Special, high-resource healthcare needs</li> <li>• Pregnancy &gt; 20 weeks</li> <li>• Burns in conjunction with trauma</li> <li>• Children should be triaged preferentially to pediatric capable centers</li> </ul> <p><b>If concerned, take to a trauma center</b></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)*

# National Guidelines for the Field Triage of Injured Patients

- Not an algorithm
- Meant to be read left to right and top to bottom
- Simplified to align with information flow to EMS
- Reflects how assessments occur on the scene
- Gets to the transport decision sooner
- Meant to reduce time and variation in making destination decisions

# The Overall Goal

- The Guidelines are meant to assist EMS to make a rapid determination of which patients benefit from being transported to a Trauma Center based on the injury pattern, the mental status, the vital signs, the mechanism of injury or any special considerations such as low-level falls, anticoagulant use, child abuse or pregnancy
- These patients have an improved survival if they are primarily transported by EMS from the scene to a Trauma Center
  - Avoids bringing a trauma patient to a hospital that is inexperienced and unequipped to care for them
  - Avoids bringing a trauma patient to a hospital that has to secondarily transfer them to another hospital
- The goal is to for EMS not take patients who meet Criteria to Non-Trauma hospitals and to take higher acuity patients to the appropriate centers

# Red Criteria Boxes

- Injury Patterns first to identify patients who are at high-risk of serious injury simply due to the suspected injury
  - Penetrating injuries to the 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
  - Crushed, degloved, mangled or pulseless extremity
  - Amputation proximal to the wrist or ankle
  - Active bleeding requiring a tourniquet or wound packing with continuous pressure
- Any of the above patients should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

# Red Criteria Boxes

- 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 < 70mmHg + (2 X age in years)
- Age 10 – 64 years
  - SBP < 90mmHg or
  - HR > SBP
- Age > 65 years
  - SBP < 110mmHg or
  - HR > SBP
- Patients who have a traumatic mechanism of injury who meet any of the above mental status or vital sign Red Criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

# Red Criteria Commentary

- Motor GCS < 6 is a new concept meant to simplify the mental status to being “not able to follow commands” (this is difficult to assess in young children who are injured)
- Room air pulse oximetry < 90% is a critically low value in most patients and please consider the need for supplemental oxygen and assisted ventilation, and track the pulse oximetry to insure that it is increasing
- New for Ages 0 to 9 is SBP < 70mmHg + (age in yrs X 2)
  - Very young patients under age 3 may not cooperate with a blood pressure being taken, have the correct sized cuff or have a correctly calibrated automatic cuff or have an audible blood pressure by manual auscultation
  - Vital signs may not be the best criteria in small children to identify seriously injured patients who maintain a blood pressure but are in compensated shock
  - Use the Pediatric Assessment Triangle with increased work of breathing, altered mental status, and skin color temperature and condition to screen for the seriously injured child
- New is HR > SBP or SBP < 90mmHg for ages 10 to 64
- New is SBP < 110mmHg or HR > SBP for ages 65 and older
  - This is meant to identify elderly patients who may be seriously injured but due to preexisting hypertension may have an elevated SBP at baseline
  - Many elderly patients take medications that may affect their resting HR and SBP

# Trauma Center Destination Selection

- Red Criteria patients shall be transported to the highest level *within* the geographic constraints of the region
- Transit time (<30 minutes) and the patient's condition are integral in this decision making
- Therefore, a Level 2 Trauma Center may also be the appropriate destination



# Yellow Criteria Boxes

- Mechanism of Injury
  - High-Risk Auto Crash
    - Partial or complete ejection
      - 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
    - Vehicle telemetry data consistent with severe injury
  - Rider separated from transport vehicle with significant impact (example motorcycle, ATV, horse, etc)
  - Pedestrian/bicycle rider thrown, run over or with significant impact
  - Fall from height > 10 feet (all ages)
- Patients meeting any one of the above 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)

# Yellow Criteria Boxes

- EMS Judgment
  - 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
- 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)

# Yellow Criteria Commentary

- Pediatric patients should be transported to a Pediatric Trauma Center
- Pregnant Trauma Patients > 20 weeks should be taken to a Trauma Center that also has OBGYN services available

# Air Medical Transport in Suffolk County

- A Collaborative effort by the Suffolk County Police Department and the Stony Brook University Paramedic Flight Program
- Highly successful program in existence for many years that performs approximately 500 air medical transports annually for many different types of EMS patients, such as stroke or STEMI, however many of the patients are trauma patients
- A request for Air Medical Transport is made by the highest level EMS provider at the scene caring for the patient, the lead EMS provider communicates with the police officers present at the scene to request Air Medical Transport through MedCOM
- A patient who requires rapid transport to a Level 1 or Level 2 trauma center and the estimated ground transport time is greater than 30 minutes (or from a barrier island), the use of Air Medical Transport should be requested
- A patient who has an unmanageable airway (can't intubate and can't ventilate) shall not be considered for air medical transport unless from a barrier island
- Please be aware that Air Medical Transport is a weather-dependent asset and may not be available at the time that it is requested if there are heavy winds or heavy rain
- If Air Medical Transport is not available, please transport the patient by ground to the closest appropriate trauma center
- Suffolk County Medical Control shall be contacted for any unclear situations

# Air Medical Transport in Suffolk County

- According to REMAC policy, Air Medical Transport is not to be utilized under the following conditions
  - Ground transport to the closest appropriate Trauma Center is within 30 minutes
  - The patient is in cardiac arrest (unless from a barrier island situation)
  - The patient has an unmanageable airway
  - Suffolk County Medical Control so directs
- If Air Medical Transport has been requested prior to EMS arrival, and EMS determines that Air Medical is not to be utilized, the highest ranking EMS provider has the authority to determine the method of transport for the patient

# Current Listing of the Geographic Area Trauma Centers

- NYS Level 1 Trauma Centers
  - Good Samaritan University Hospital in West Islip
  - Nassau University Medical Center in East Meadow
  - Stony Brook University Hospital in Stony Brook
- NYS Level 2 Trauma Centers
  - South Shore University Hospital in Bay Shore
- NYS Level 3 Trauma Centers
  - Huntington Hospital in Huntington
  - Long Island Community Hospital in Patchogue
  - Peconic Bay Medical Center in Riverhead
  - Stony Brook Southampton Hospital in Southampton

# Current Listing of the Geographic Area Pediatric Trauma Centers

- NYS Level 1 Pediatric Trauma Centers
  - Cohen Children’s Medical Center in New Hyde Park
  - Stony Brook University Hospital in Stony Brook
- NYS Level 2 Pediatric Trauma Centers
  - Good Samaritan Hospital Medical Center in West Islip

# Pediatric Issues

- Pediatric patients are defined as persons who have not yet reached their 15<sup>th</sup> birthday
- Pediatric trauma patients should be preferentially transported to the area Pediatric Trauma Centers
- If possible, please do not separate injured children from their families or caregivers and transport all the patients in the family to the Pediatric Trauma Center



# National Guideline for the Field Triage of Injured Patients

## RED CRITERIA

### High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
<ul style="list-style-type: none"> <li>• Penetrating injuries to head, neck, torso, and proximal extremities</li> <li>• Skull deformity, suspected skull fracture</li> <li>• Suspected spinal injury with new motor or sensory loss</li> <li>• Chest wall instability, deformity, or suspected flail chest</li> <li>• Suspected pelvic fracture</li> <li>• Suspected fracture of two or more proximal long bones</li> <li>• Crushed, degloved, mangled, or pulseless extremity</li> <li>• Amputation proximal to wrist or ankle</li> <li>• Active bleeding requiring a tourniquet or wound packing with continuous pressure</li> </ul>	<p><b>All Patients</b></p> <ul style="list-style-type: none"> <li>• Unable to follow commands (motor GCS &lt; 6)</li> <li>• RR &lt; 10 or &gt; 29 breaths/min</li> <li>• Respiratory distress or need for respiratory support</li> <li>• Room-air pulse oximetry &lt; 90%</li> </ul> <p><b>Age 0-9 years</b></p> <ul style="list-style-type: none"> <li>• SBP &lt; 70mm Hg + (2 x age years)</li> </ul> <p><b>Age 10-64 years</b></p> <ul style="list-style-type: none"> <li>• SBP &lt; 90 mmHg or</li> <li>• HR &gt; SBP</li> </ul> <p><b>Age ≥ 65 years</b></p> <ul style="list-style-type: none"> <li>• SBP &lt; 110 mmHg or</li> <li>• HR &gt; SBP</li> </ul>

*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 Judgment
<ul style="list-style-type: none"> <li>• High-Risk Auto Crash               <ul style="list-style-type: none"> <li>- Partial or complete ejection</li> <li>- Significant intrusion (including roof)                   <ul style="list-style-type: none"> <li>• &gt;12 inches occupant site OR</li> <li>• &gt;18 inches any site OR</li> <li>• Need for extrication for entrapped patient</li> </ul> </li> <li>- Death in passenger compartment</li> <li>- Child (Age 0-9) unrestrained or in unsecured child safety seat</li> <li>- Vehicle telemetry data consistent with severe injury</li> </ul> </li> <li>• Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)</li> <li>• Pedestrian/bicycle rider thrown, run over, or with significant impact</li> <li>• Fall from height &gt; 10 feet (all ages)</li> </ul>	<p><b>Consider risk factors, including:</b></p> <ul style="list-style-type: none"> <li>• Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact</li> <li>• Anticoagulant use</li> <li>• Suspicion of child abuse</li> <li>• Special, high-resource healthcare needs</li> <li>• Pregnancy &gt; 20 weeks</li> <li>• Burns in conjunction with trauma</li> <li>• Children should be triaged preferentially to pediatric capable centers</li> </ul> <p><b>If concerned, take to a trauma center</b></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)*

# Case Scenario 1

- EMS is called to the scene of a motorcycle accident with one patient, a 25 y o m was thrown off the motorcycle and has signs of a head injury – not following commands (motor GCS < 6), no respiratory distress, SBP is 110, HR is 100, pt also has deformity of the R lower leg and ankle and some abrasions on the back and flanks
- EMS performs c spine immobilization, places the patient on 100% oxygen by NRB mask and splints the R lower leg to prepare him for transport
- The patient is maintaining his airway and ventilating well on his own, but continues to be confused and unable to follow commands
- The geographic location of the scene is an estimated travel time of 25 minutes by ground to a Level 1 Trauma Center and 5 minutes from a Level 3 Trauma Center

# Case Scenario 1

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- EMS performs c spine immobilization, places the patient on 100% oxygen by NRB mask and splints the R lower leg to prepare him for transport
- The patient is maintaining his airway and ventilating well on his own, but continues to be confused and unable to follow commands
- The geographic location of the scene is an estimated travel time of 25 minutes by ground to a Level 1 Trauma Center and 5 minutes from a Level 3 Trauma Center
- The patient should be transported by ground to the Level 1 Trauma Center
- Red Criteria: motor GCS < 6, unable to follow commands
- The correct decision is for EMS to bypass the Level 3 TC and go directly by an additional 20 minutes transport time to the Level 1 TC
- EMS providers should notify the receiving Trauma Center as soon as possible to give them additional time to prepare for the patient's arrival

# Case Scenario 2

- EMS is called for an elderly female who fell down a flight of steps in her home
- She is awake and alert, has difficulty breathing with suspected broken ribs on the L side of the chest, HR is 110, SBP is 90, RR is 30, pulse oximetry is 94% and she is placed in a c collar and provided with high flow oxygen by NRB
- She also has L hip and pelvis area pain to palpation
- Equal bilateral breath sounds were noted, but diffuse crepitation on the L side of the ribcage with some bruising there
- The patient is maintaining her airway and ventilating well on her own, and she remains alert but is becoming more confused, and there is a developing hematoma on the L side of her forehead where she struck her head, she is not following commands appropriately
- The geographic location of the scene is an estimated 45 minutes by ground to a Level 1 Trauma Center and 10 minutes by ground to a Level 3 Trauma Center
- Red Criteria: RR > 29, motor GCS < 6, not following commands, SBP < 110, and HR > SBP
- The patient may qualify for Air Medical Transport and MedCom should be contacted to see about the availability of the helicopter, as the estimated ground transport time to the Level 1 Trauma Center is greater than 30 minutes
- Clear weather conditions are present and MedCom informs you that Air Medical Transport is available and to meet the helicopter at the landing zone which is 5 minutes away by ground – EMS prepares the patient accordingly

# Case Scenario 2

- EMS is called for an elderly female who fell down a flight of steps in her home
- She is awake and alert, has difficulty breathing with suspected broken ribs on the L side of the chest, HR is 110, SBP is 90, RR is 30, pulse oximetry is 94% and she is placed in a collar and provided with high flow oxygen by NRB
- She also has L hip and pelvis area pain to palpation
- Equal bilateral breath sounds were noted, but diffuse crepitation on the L side of the ribcage with some bruising there
- The patient is maintaining her airway and ventilating well on her own, and she remains alert but is becoming more confused, and there is a developing hematoma on the L side of her forehead where she struck her head, she is not following commands appropriately
- The geographic location of the scene is an estimated 45 minutes by ground to a Level 1 Trauma Center and 10 minutes by ground to a Level 3 Trauma Center
- Red Criteria: RR > 29, motor GCS < 6, not following commands, SBP < 110, and HR > SBP
- The patient may qualify for Air Medical Transport and MedCom should be contacted to see about the availability of the helicopter, as the estimated ground transport time to the Level 1 Trauma Center is greater than 30 minutes
- Clear weather conditions are present and MedCom informs you that Air Medical Transport is available and to meet the helicopter at the landing zone which is 5 minutes away by ground – EMS prepares the patient accordingly
- The correct decision is to transport the patient to the highest level Trauma Center and in this case that estimated ground transport is greater than 30 minutes qualifies the patient for Air Medical Transport
- If Air Medical Transport was unavailable, it may be best to contact Suffolk County Medical Control for guidance

# Case Scenario 3

- EMS is called to the scene of a multi-car collision, there are 3 patients total from one vehicle that struck another vehicle and started a chain reaction pile up – this vehicle has significant intrusion 20 inches into the roof and the passenger's side – all airbags deployed
- All the other vehicles have no patients
- The mother is a 30 y o f with c/o L arm pain and some facial abrasions from striking the steering wheel as the driver, RR 20, HR 100, SBP 130, awake and following commands
- The father is a 32 y o m with a head injury, he is awake but confused and not following commands, motor GCS <6, RR 20, HR 90, SBP 115, he has no other injuries
- There is a 5 y o boy in the car who was found in the back seat not in a car-seat/unrestrained, he is lethargic and whimpering and has an obvious deformity of the R lower leg, some abrasions over the abdomen and back, and the R arm has some tenderness at the wrist, RR 40, SBP not performed, HR 160
- The geographic location is an estimated travel time of 15 minutes from a Level 1 Adult which is also a Regional Pediatric Trauma Center and 5 minutes from a Level 2 Adult Trauma Center with no Pediatric designation and there is some discussion among the EMS providers of splitting up the patients so as not to encumber one Trauma Center

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- Red Criteria for Patients 2 and 3 : Patient 2 has motor GCS<6, unable to follow commands, Patient 3 has RR >40 and is Pediatric
- Yellow Criteria for Patient1: high risk MVA with intrusion
- The correct decision is to take all 3 patients to the same Trauma Center which is the Level 1 Adult and also a Regional Pediatric Trauma Center
- Do not separate families if possible, because the mother will be needed to assist with the care and consent for her child and to consent for the father as well who has a suspected head injury
- Pediatric trauma patients (less than age 15) who meet Red Criteria or Yellow Criteria are best treated at Pediatric Trauma Centers

# Case Scenario 4

- EMS is called to the scene of an MVC where one car struck another Tbone style
- Patient 1 is the driver of one car, she is a 25 y o f who is 30 weeks pregnant, she is awake and alert, but complains of abdominal pain and contractions, RR 20, HR 80, SBP 110
- Patient 2 is the other driver, 78 y o f who has altered mental status, not following commands and has a laceration over the R side of her head which is bleeding – a bandage is applied and a cervical collar, RR 18, HR 70, SBP 100, she also has some neck and back pain and has some tenderness to palpation over the abdomen
- The geographic location is an estimated ground transport time of 25 minutes to a Level 1 Trauma Center and 10 minutes to a Level 3 Trauma Center with no OBGYN services



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- The geographic location is an estimated ground transport time of 25 minutes to a Level 1 Trauma Center and 10 minutes to a Level 3 Trauma Center with no OBGYN services
- Red Criteria for Patient 2: motor GCS<6, unable to follow commands, SBP <110 for age over 65 years
- Yellow Criteria for Patient 1: Pregnancy >20 weeks
- The correct decision is to take both patients to the Level 1 Trauma Center – because the Level 3 Trauma Center has no OBGYN services the pregnant trauma patient should not be transported to a Trauma Center that has OBGYN services available

**Completion of the  
Suffolk County  
Regional Emergency Medical Advisory Committee  
and Regional Trauma Advisory Committee  
Trauma Triage  
Educational Program**

**THANK YOU**



**Suffolk  
REMAC**  
Suffolk Regional Emergency Medical Advisory Committee

