Mercyhealth Prehospital & Emergency Services Center

CME Series

Tactical Patient Care:

Working with Law Enforcement in Sticky Situations

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August 2022

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Education Overview

- Roles of EMS and law enforcement personnel at the scene
- Proper approach to management of agitated, violent, or combative patients
- Refresh on RTF basics
- General review with some best practice updates on trauma care
- Group practice with application of SALT triage
- Interactive trauma patient scenario

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1.6 Crime Scene Management

It is clearly understood that the first and foremost duty of all personnel (law enforcement and EMS) is to protect and preserve human life. Pre-hospital providers must ensure that patient care is given the highest priority. In addition, and to the extent possible, this care should be given with consideration to the needs of law enforcement with respect to personnel safety, crime scene management and preservation of evidence. Pre-hospital personnel shall follow the direction of law enforcement with respect to crime scene management. The direction should not prevent nor detract from quality care. The following guidelines should be followed:

I. Park EMS vehicles with consideration of the crime scene
- Do not run over shell casings
- Do not destroy evidence such as tire tracks, foot prints, or broken glass

II. Consider wearing gloves for all activities at a crime scene including those not directly involved with patient care.

III. Entry to the crime scene should be made with the minimum number of personnel necessary to access and provide care to the patient(s).
- Do not send in multiple BLS first responders, ALS first responders and ambulance crew if it is likely to be a presumption of death

IV. Entry to and exit from the crime scene should be accomplished by the same route.
- Do not walk through fluids (blood) on the floor/ground

V. Care should be taken not to disturb any physical evidence. (Physical evidence can be as small as a single hair)

VI. Do not move or touch anything unless it is necessary to do so for patient care.
- Observe and document any items moved
- Notify law enforcement of, and document, any items removed from the scene (impaled object, bottles, and patient belongings)
- Weapons should not be moved unless they pose an immediate threat

VII. Removal of patient clothing should be kept to a minimum. Clothing removal should be done in a manner which will minimize the loss of physical evidence.
- Do not cut through bullet holes or knife holes

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VIII. Clothing and all personal articles of the patient are to be left in the possession of law enforcement personnel whenever possible. Do not discard anything. If law enforcement is not immediately available to take possession of evidence or articles, place in paper bag and maintain in your possession to prevent any contamination of evidence. Law enforcement will take possession of evidence as soon as possible. If resuscitation was attempted, all EKG electrodes, defibrillation pads, IVs, IOs, invasive catheters(e.g. chest needles), and advanced airway devices should be left in place.

IX. Put wrappers and other disposable "trash", which accumulates as patient care is rendered, in a single site away from the patient and/or potential crime scene evidence. Do not pick up on-scene trash items and discard because evidence may be destroyed. On-scene law enforcement personnel may suggest a site to be used for trash which would be most ideal to maximize preservation of evidence.

X. Do not clean or disturb a patient's hands when involved with a firearm. Consider covering the patient's hands with a paper bag during treatment and transport.

XI. Patients who meet the "obvious death" criteria do not require EKG confirmation of asystole, or any manipulation of the body. These include:

- rigor mortis
- dependent lividity
- decomposition
- decapitation
- incineration
- transected torso

Note: A single person can rapidly assess for pulse and respirations.

XII. Patients who meet the criteria for withholding resuscitative efforts should be assessed using the minimum number of EMS personnel. EKG confirmation of asystole should be completed with minimal movement of the body.

XIII. Medical direction should be contacted in the event that a coroner, medical examiner, deputy coroner, deputy medical examiner, licensed physician, or hospice RN(if the patient is enrolled in hospice at the time of death) intend to pronounce death on scene with EMS personnel present. EMS in conjunction with online medical direction physician will determine if resuscitation should be withheld when EMS is presuming death. Law enforcement has been trained in obvious death criteria.

If obvious death has been presumed by a law enforcement officer, and EMS is present, it is recommended that EMS be involved in the presumption of death. It is important to document the name and badge number of the officer presuming death or limiting access to the scene for patient assessment as the liability for such a decision will rest with him/her, and his/her department.

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XIV. Every effort to cooperate with law enforcement should be made. In the event of a disagreement with law enforcement, EMS personnel should document the problem and refer the matter to their superior for follow-up and/or action. If the disagreement involves, in the opinion of the pre-hospital provider, an issue that will or could result in patient harm, an immediate request for on-scene EMS and Law Enforcement supervisory personnel should be made, including consideration for direct medical oversight advice.

XV. In the event that EMS personnel discover a crime scene, or are at a crime scene without law enforcement, an immediate request for law enforcement shall be made. Until such time as law enforcement arrives, EMS personnel shall assure their own safety and if possible, attempt to follow the guidelines contained in this document.

XVI. Laundering of the scene at the completion of the investigation is not routinely in the scope of responsibility for the EMS or fire agencies and therefore these requests should be referred to the appropriate resources for completion of scene management.

XVII. It is the suggestion of the County District Attorney's Office that all victims of a sexual assault be Examined by a certified Sexual Assault Nurse Examiner(SANE).

1. Paramedics who respond to a call for an alleged sexual assault victim should do a medical screening exam to determine any physical trauma that needs immediate attention. Treat appropriately. The paramedic should examine the genitalia only if severe injury is present or suspected.
2. Inform the patient that this is the recommendation of the doctors and the District Attorney and secure permission. This must be an informed decision.
3. When possible the paramedic should explain all procedures before initiating them.
4. Patient history should be limited to the elements needed to provide emergency care.
5. Be cognizant of preserving evidence during the process of patient assessment and care. This should include:
    a. Cover cot with paper chux or sterile burn sheet
    b. Handle clothing as little as possible
    c. Do not clean wounds unless absolutely necessary
    d. Do not allow the patient to drink or brush teeth
    e. Ask the victim not to change clothes or bathe
    f. Disturb the crime scene as little as possible.
6. Contact Medical control and advise them of patient condition/injuries. Medical Control will advise to appropriate receiving facility.
7. If the patient is stable, it may be necessary to inform your Fire Department Officer that you will be transporting the patient to a SANE facility. Document that the reason for transfer is for a SANE exam.

PD brings you a patient…

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Role of EMS vs LE

EMS = provide patient care

- Requires access to patient
- Help determine decisional capacity

LE = evidence preservation, neutralize threat, safety and protection of public/EMS

- NOT authorized to dictate medical treatment
- Use various restraint techniques/technology not allowed by EMS (requires LE presence)

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“Primum non nocere”

- Ethics of what is best for patient, de-escalation, avoidance of personalizing the encounter, and wide differential diagnosis is all critical to avoid missing serious condition, clinical deterioration, and liability
- People are also watching:
  - Cell phones
  - LE body cameras
  - DOT cameras
  - Hospital staff

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General Approach to Agitated Patient

1. All hazards evaluation of scene safety and potential threats (crowds, alcohol/drugs, crime, emotional stress, AMS)
2. Assessment of potentially violent patient (communication, posture, body language, speech, weapons)
3. Identify yourself and establish rapport/orientation
4. Maintain control and safety (defensive, de-escalation, safe distance, nonphysical, disengage, exit route)
5. Evaluate for physiologic/organic causes (AEIOUTIPS: trauma, diabetic, seizure, CVA, intoxication, dementia, autism/DD, hypoxia, infection, etc)
6. Assess decisional capacity, risk to self or others, or unable to care for self posing an immediate threat
7. Attempt to gain understanding and cooperation

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Patient Rights, Safety, & Dignity

- All patients, particularly those who are non-decisional patients, need their rights protected, including the right to acute medical evaluation and care.
- When a patient is not decisional or has been declared to be incompetent to accept or refuse care, their judgment must be replaced by someone else's.
- If a person is believed to be mentally ill and/or is experiencing a behavioral emergency and they are non-decisional, they must be transported to the nearest hospital, against their will if necessary, for their ultimate safety and benefit.

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Capacity for Refusal

	Behaviors Suggesting Intact Capacity
Understanding of Key Information	• Describes current medical problems • Lists treatment options offered, including no treatment • Names major risks and benefits of each alternative, including no treatment • Retains information disclosed during the course of the conversation
Appreciation of Situation and Consequences	• Explains how current medical problems impact life • Discusses likely outcomes of treatment options, including no treatment • Articulates reasons provider recommends a particular option
Use of reasoning	• Explains factors considered when making a choice • Discusses goals and values influencing decision • Connects choice to the likely outcome • Choice aligns with previously stated goals and reasoning
Make and Express a Choice	• Physically able to communicate • Indicates chosen alternative

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Discussion on Illinois Law

- "IL Form 5 petition" - allowed under IL state but comes with some requirements including reading of rights
  - warrants good training to help perform appropriately
  - Communicate well your concerns to try and reach agreement on what is best for patient
- Alcohol level vs intoxication – capacity?
- When in doubt, involve supervisors/med control!

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Illinois DMH Statute on Involuntary Petition

If the patient is judged to have a psychiatric cause for their illness that meets one of the eligibility requirements on the petition form, EMS personnel should initiate The State of Illinois Department of Human Services - Division of Mental Health**: Petition for Involuntary/Judicial Admission Form IL462-2005 (R-04-18)**

- A Petition for Involuntary Judicial Admission form is the first step in a legal process that protects the patient's rights and is necessary before a physician can determine if an involuntary admission is necessary.
- A petition form is to be completed when EMS personnel or family members have first-hand knowledge and reasonably suspect that a patient is mentally ill and because of their illness would intentionally or unintentionally inflict serious physical harm upon themselves or others in the near future, is mentally retarded and is reasonably expected to inflict serious physical harm upon himself/herself or others in the near future, or is unable to provide for his or her own basic physical needs so as to guard himself or herself from serious harm and needs transport to a hospital for examination by a physician (Ill Mental Health Code).
- A petition form should be completed for all patients that meet the above criteria. They may be transported with or without their consent for medical evaluation. Careful documentation of first-hand observations is critical.

Exemption from liability

"All persons acting in good faith and without negligence in connection with the preparation of applications, petitions, certificates or other documents, for the apprehension, transportation, examination, treatment, habitation, detention, or discharge of an individual under the provisions of the Act incur no liability, civil or criminal, by reason of such acts."

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Illinois Mandatory Reporting populations

- Person abused by a family or household member
- High-risk adult w/ disabilities who is abused, neglected, or exploited by a family or household member
- Minor child or dependent adult in the care of such person
- Person residing/employed at a private home/ public shelter which is sheltering an abused family or household member
- Adults >60 years old with suspicion of abuse or neglect

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Wisconsin Mental Health Statute

- 4th Amendment – Search & Seizure
- Chapter 94.03 – Implied Consent
- Chapter 51.15 – Danger to Self/Others
- Chapter 51.45 – Alcohol/Drug Incapacitation
- Chapter 55.06 – Unable to Care for Self

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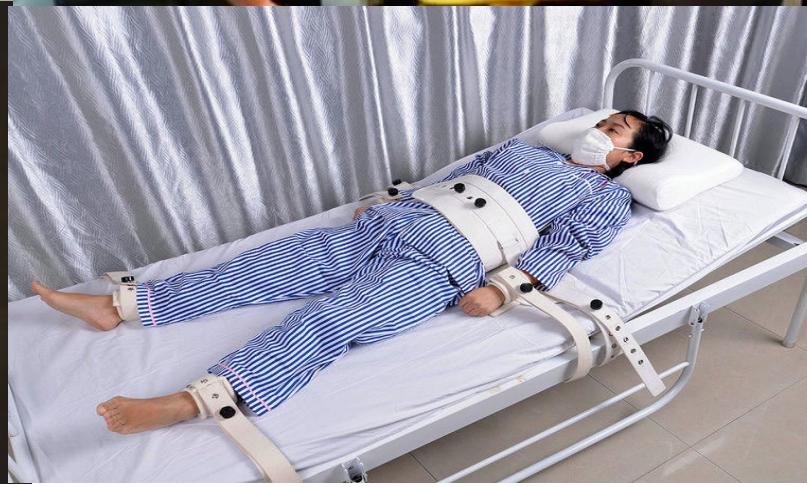
The 4th Amendment

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

Freedom from Confinement



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Implied Consent

94.03(2m)

"In emergency situations or where time and distance requirements preclude obtaining written consent before beginning treatment and a determination is made that harm will come to the patient if treatment is not initiated before written consent is obtained"

https://docs.legis.wisconsin.gov/code/admin_code/dhs/030/94/i/03/2m

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Kidnapping / False Imprisonment

Chapter 940.31

By force or threat of imminent force carries another from one place to another without his or her consent and with intent to cause him or her to be secretly confined or imprisoned or to be carried out of this state or to be held to service against his or her will; or

By deceit induces another to go from one place to another with intent to cause him or her to be secretly confined or imprisoned or to be carried out of this state or to be held to service against his or her will.

Chapter 940.30

Whoever intentionally confines or restrains another without the person's consent and with knowledge that he or she has no lawful authority to do so is guilty of a Class H felony

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Why does LE want EMS to Transport?

April 19, 2015

Danger to Self or Others

51.15

- Danger to self: "a substantial probability of physical harm to him or herself as manifested by evidence of recent threats or attempts at suicide or serious bodily harm."
- Danger to others: "a substantial probability of physical harm to other persons as manifested by evidence of recent homicidal or other behavior on his or her part, or by evidence that others are placed in recent fear of violent behavior and serious physical harm to them, as evidenced by a recent overt act, attempt, or threat to do serious physical harm on his or her part."
- Inability to care for self: "a substantial probability of physical impairment or injury to himself or herself due to impaired judgment, as evidence by a recent act or omission." *(exceptions: provision of protection or minor)*
- Inability to Satisfy Basic Needs: "for nourishment, medical care, shelter or safety without prompt or adequate treatment so that a substantial probability exists that death, serious physical injury, serious physical debilitation or serious physical disease will imminently ensue"

https://docs.legis.wisconsin.gov/statutes/statutes/51/15

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Intoxicated vs Incapacitated

51.45

- **Intoxicated** = A person whose mental or physical functioning is substantially impaired as a result of the use of alcohol. An intoxicated person is simply a person who has had too much to drink but doesn't appear to need medical attention and has not threatened or committed physical harm to himself/herself, to others or to property.
  - If intoxicated person wants treatment, LE can assist with taking to ER so they can start the voluntary process
  - Intoxicated subjects should not be restrained unless they begin to be a danger.
  - If they become uncooperative, it's recommended that they be escorted out or turned over to responsible party

https://docs.legis.wisconsin.gov/statutes/statutes/51/45

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Intoxicated vs Incapacitated

51.45

- **“Incapacitated by alcohol or another drug"** means that a person, as a result of the use of or withdrawal from alcohol or another drug, is unconscious or has his or her judgment otherwise so impaired that he or she is incapable of making a rational decision, as evidenced objectively by such indicators as extreme physical debilitation, physical harm or threats of harm to himself or herself or to any other person, or to property.
  - They can be taken into protective custody, transported by EMS, evaluated for medical clearance in an ED, and admitted to detox facility.
  - Determination of need for medical clearance should occur AFTER determination that a placement is necessary and that placement requires medical clearance

https://docs.legis.wisconsin.gov/statutes/statutes/51/45

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Protective Services & Placement

55.06

- Court-ordered protective placement or protective services for adult (or DD > 14yrs)
- Filed a petition to transfer a foreign guardianship
- Have a need for protective placement or protective services.
- Adjudicated incompetent

https://docs.legis.wisconsin.gov/statutes/statutes/55/06

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Shift Supervisor: (608)755-3055
Dispatch: (608) 757-2244

Janesville Police Department

Police Notification at Medical Facility

Patient Name: _____ Date: _____ Incident# _____

Medical Facility Name: _____ Police Officer Requesting Hold: _____

The above named patient is being admitted to the above named facility and may require further detention under the following authority:

- ☐ A sub chapter of **Wisconsin S.S. 51.15** and the officer has probable cause to believe the detention meets the criteria set forth in that statute.
- ☐ Under authority of **Wisconsin S.S. 55.06,** unable to care for oneself.
- ☐ Under authority of **Wisconsin S.S. 51.45 (11) (b)** emergency detention for alcohol or other drugs. A person brought to an approved public treatment facility under this paragraph shall be deemed to be under the protective custody of the facility upon arrival.

Handoff information for facility (describe all that apply):

Warrants _____

Felony Charges _____

Misd. Charges _____

Violent Behavior _____

Violent History _____

Sex Offender _____

Probation Status _____

The Janesville Police Department (JPD) is requesting:

No Telephone____ No Visitors_____ Family Restriction _____ Police Presence_____

Please describe the reason for all that apply: _____

_____

_____

_____

To extent authorized, please notify the JPD shift supervisor prior to patient discharge. The JPD is requesting discharge information due to the following:

- ☐ Notification for transfer to the County Jail
- ☐ Notification for processing of criminal charges
- ☐ Available for interview
- ☐ Warrants

FACILITY: CHECK HERE IF AUTHORIZATION TO DISCLOSE TO JPD IS ON FILE ☐

In the event of an emergency, please call 911

If 51.45(11) (b), the final disposition is _____

Receiving Nursing Unit_____ Secondary Nursing Unit _____

Tertiary Nursing Unit_____

Position Statements

Clinical Care and Restraint of Agitated or Combative Patients by Emergency Medical Services Practitioners

Douglas F. Kupas, MD, Gerald C. Wydro, MD, David K. Tan, MD, Richard Kamin, MD, Andrew J. Harrell IV, MD & Alvin Wang, DO

Pages 721-723 | Received 11 Apr 2021, Accepted 11 Apr 2021, Accepted author version posted online: 20 Apr 2021, Published online: 07 Jun 2021

From NAEMSP, NASEMSO, NAEMSMA, NAEMT, and APA…

- It is of paramount importance to protect agitated, combative, or violent patients from injuring themselves, while simultaneously protecting the public and emergency responders from injury.
- Specific protocols for dealing with an agitated, violent, or combative Pt should be developed in consultation with EMS system administrators, legal counsel, and local law enforcement, but ultimately this patient-centered clinical protocol must be approved by the EMS medical director.
- EMS practitioners must perform an appropriate patient assessment to identify clinical conditions that may be contributing to a patient's agitated, combative, or violent behavior. EMS agencies should consider using an agitation score, like the Richmond Agitation Sedation Scale (RASS).
- Patient Dignity: includes use of the least restrictive method of restraint that protects the patient, the public, and responders from harm. The use of appropriate de-escalation techniques should take precedence over physical restraint or pharmacologic management whenever possible.

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- EMS and Law Enforcement Techniques Differ: All agencies should recognize their roles and work cooperatively and proactively to ensure the safe care of patients assessed or treated by EMS.
- Assessment of Pts Restrained by LE: LE may apply restraint techniques or technologies not sanctioned by EMS protocols. These individuals may also need, or may develop a need for, EMS assessment or patient care. In these cases, a LE officer must remain immediately available while EMS manages the patient acting as an advocate for the safety, medical monitoring, and clinical care of the patient.
- Patients in Custody: LE should either accompany the patient during transport by ambulance or the law enforcement-based restraint intervention should, when appropriate, be discontinued in favor of a sanctioned EMS-based restraint intervention. Patients who are in law enforcement custody or who are under arrest, must always have a law enforcement officer present or immediately available during EMS transport.
- EMS practitioners must not administer sedating medications to an individual to facilitate arrest or to assist law enforcement to take the individual into custody.

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DECEMBER 1, 2021

FINAL REPORT

KETAMINE INVESTIGATORY REVIEW PANEL

COLORADO
Department of Public Health & Environment

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Examining Use of Ketamine for Agitation

- Rejection of “excited delirium” diagnosis
  - Findings of implicit bias and racism
    - Associated terms: “hyperaggression”, “increased strength”, “police noncompliance”
    - Cases of Elijah McClain, George Floyd, BLM
  - Inaccurate assessments
  - Improper use of Ketamine
  - New term: “delirium with agitation”
- Appropriate use of ketamine
  - Better indication: de-escalation techniques fail, patient poses immediate and significant risk to self/others, no better means for treatment and transport
  - Safety: monitoring and support equipment, dosing, good ongoing assessment

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Putting it all together…

2.0.1

Mercyhealth System

Medical Guidelines

2.0 AGITATED & COMBATIVE

Note:

- Ensuring the safety of EMS personnel is of paramount importance. Always summon law enforcement to secure the scene and patient before attempting to provide medical care.
- Physical restraints are only permitted when the patient is potentially dangerous to self or others.
- Never apply physical restraints for punitive reasons, or in a manner that restricts breathing and circulation, or in places that restrict access for monitoring the patient.
- Behavioral disturbances are often the result of underlying medical conditions that require immediate medical attention, including head trauma, alcohol or drug intoxication, metabolic disease, and psychiatric disorders. Patients in need of medical attention must be transported in an ambulance, not a police vehicle.
- EMS personnel are not trained in law enforcement restraint techniques. If law enforcement restrains the patient with handcuffs, an officer with a key must accompany the patient during transport.
- Patients most at-risk of dying in police custody are those who violently resist and struggle against restraints.
- Continued patient struggling can lead to hyperkalemia, rhabdomyolysis, and cardiac arrest.

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EMERGENCY MEDICAL RESPONDER/EMT

- Scene size-up, do not approach an agitated and combative patient before law enforcement has gained control of the situation
- It is reasonable to attempt verbal de-escalation, but do not persist if it appears to be futile or making the situation worse
- First responders are not allowed to physically restrain a patient, but they are not prohibited from providing medical care to a patient who has been restrained by law enforcement
- Initiate Routine Medical Care once it is safe and practical
- Consider physical restraints [1] as a last resort when verbal control is ineffective
- Ensure you have a minimum of four people, one for each limb. All act at the same time.
- Always keep the patient informed why the restraints are being used
- Soft restraints or padded hard restraints are preferred for use by EMS personnel
- No hog-tying or hobble restraints allowed. No "sandwiching" with long boards or scoop stretchers
- Once restrained, the patient must be brought to a sitting position or the recovery (lateral recumbent) position
- Do not keep the patient in a prone position once restrained
- If EMS or law enforcement personnel must "pile on" to gain control, they must get off the patient as quickly as possible to permit the patient to breathe
- If spitting, a spit net or surgical mask may be applied to the patient

AEMT

- Do not attempt to initiate an IV until the patient becomes cooperative
- IV 0.9% NS @ KVO
- If signs of hyperthermia or hypovolemia are present, administer normal saline wide open, verifying clear lung sounds and vitals every 500ml
- Consider a second IV

PARAMEDIC

- For safety of responders and or patient that is actively violent or aggressive, consider disassociating with **Ketamine** 2 mg/kg IV/IO (max dose 200mg) or 4 mg/kg IM (max dose 400mg). May repeat x1 in 5 minutes if no effect.
- Consider **Versed** 0.1mg/kg IV/IO/IN(max 5mg bolus) or 0.2mg/kg IM(max 10mg bolus)to calm mild agitation, be cautious of paradoxical effect
- Obtain a 12-Lead EKG, if able
- Monitor vital signs every 5 minutes including continuous etCO2 and SpO2

FOOTNOTES:

[1] Mandatory Physical Restraint Documentation

- Document alternative options explored and why the restraints were applied (including a description of the threat to self or others)
- The time the restraints were applied, and the time(s) of restraint removal (if done before hospital arrival)
- Who (which agency) applied the restraints
- What kind of restraints
- Vital signs and observations about patient status every five minutes
- Evidence that distal neurovascular function was not impaired by the restraints
- The position of the patient after restraints were applied
- Medication(s) used and their effects, including adverse effects

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“Systemic failures” in Uvalde shooting went far

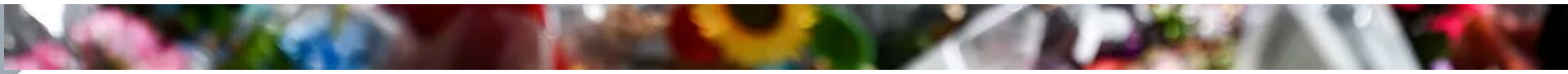
“If there’s kids in there,

Uvalde school board

Eight pivotal moments in the police response to the Uvalde shooting, captured by officers’ body cameras

BY **REESE OXNER** JULY 22, 2022

The new material further illustrates the lack of coordination among officers, the confusion over the chain of command and the delays in confronting the shooter. **FULL STORY →**



https://www.texastribune.org/series/uvalde-texas-school-shooting/

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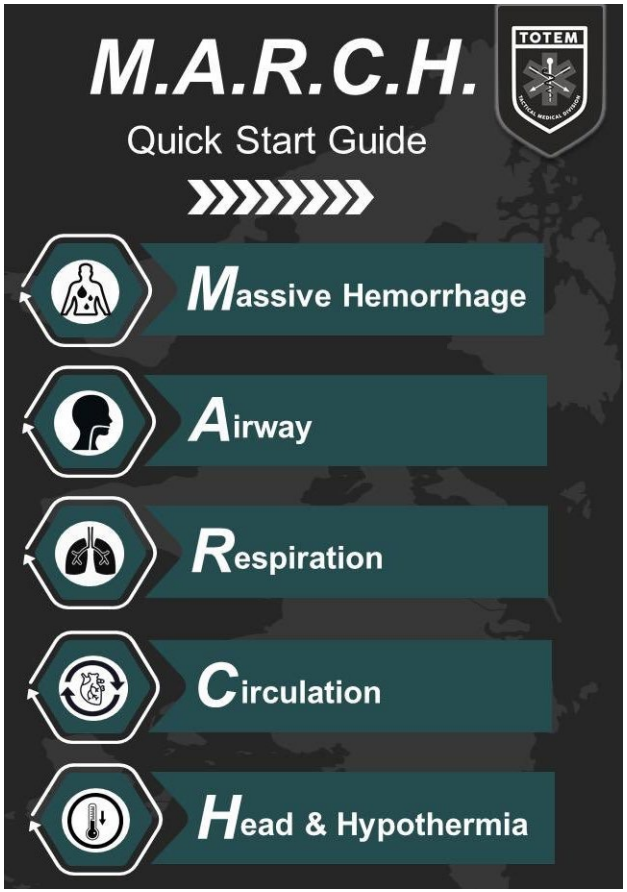
INTEGRATED RESPONSE

Primary Survey / Mantras

- **RISK** a Lot to Save a Lot
- Risk Little to Save Little
- Risk Nothing to Save What's Already Lost



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NFPA RTF Statement

- **RESCUE TASK FORCE** (**RTF**) is a set of teams deployed to provide point of wound care where there is an on-going ballistic or explosive threat.
- These teams treat, stabilize, and remove casualties while wearing Ballistic Protective Equipment (**BPE**) in a rapid manner under the protection of LE.

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Active Threat Response

LEO			FIRE/EMS		
PATROL	→	IMMEDIATE	RTF	→	IMMEDIATE
SWAT	→	DELAYED	TEMS	→	DELAYED

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Law Enforcement Safety Priorities

A decision-making process which provides the framework for making tactically sound decisions

- Objective criteria based on an individual's **current or likely risk of suffering serious bodily injury or death** and their **direct ability to remove themselves from that danger**
- Those exposed to the **greatest potential of injury** with the **least ability to escape the situation** are placed at the **top of the priorities**

1. Hostages/Potential Casualties
2. Innocent Citizens
3. **Law Enforcement / EMS**
4. Hostage Takers/Suspects

1. **STOP THE KILLING**
2. **STOP THE DYING**

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TECC Review

HOT ZONE
EVACUATION CARE

DIRECT PRESSURE
TOURNIQUET
RECOVERY POSITION

WARM ZONE
INDIRECT THREAT CARE

TOURNIQUETS
WOUND PACKING
HEMOSTATIC GAUZE
CHEST SEALS
TRAUMA DRESSINGS
AIRWAY/NPA/SURGICAL
NEEDLE DECOMPRESSION (PARAMEDIC)
HYPOTHERMIA PREVENTION

COLD ZONE
EVACUATION CARE

EVERYTHING ELSE

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SOURCE: *ALERRT ACTIVE THREAT INTEGRATED RESPONSE COURSE (ATIRC) PARTICIPANT GUIDE V1.0C*

Zones of Care under Active Threat

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7 Critical Tasks of Incident Command

1. Announce Command / Establish Communications
2. Identify the HOT ZONE
3. Establish the inner perimeter
4. Establish the outer perimeter
5. Establishing the command post
6. Establish the staging areas
7. Identify and request additional resources

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CCP, Triage, & Staging

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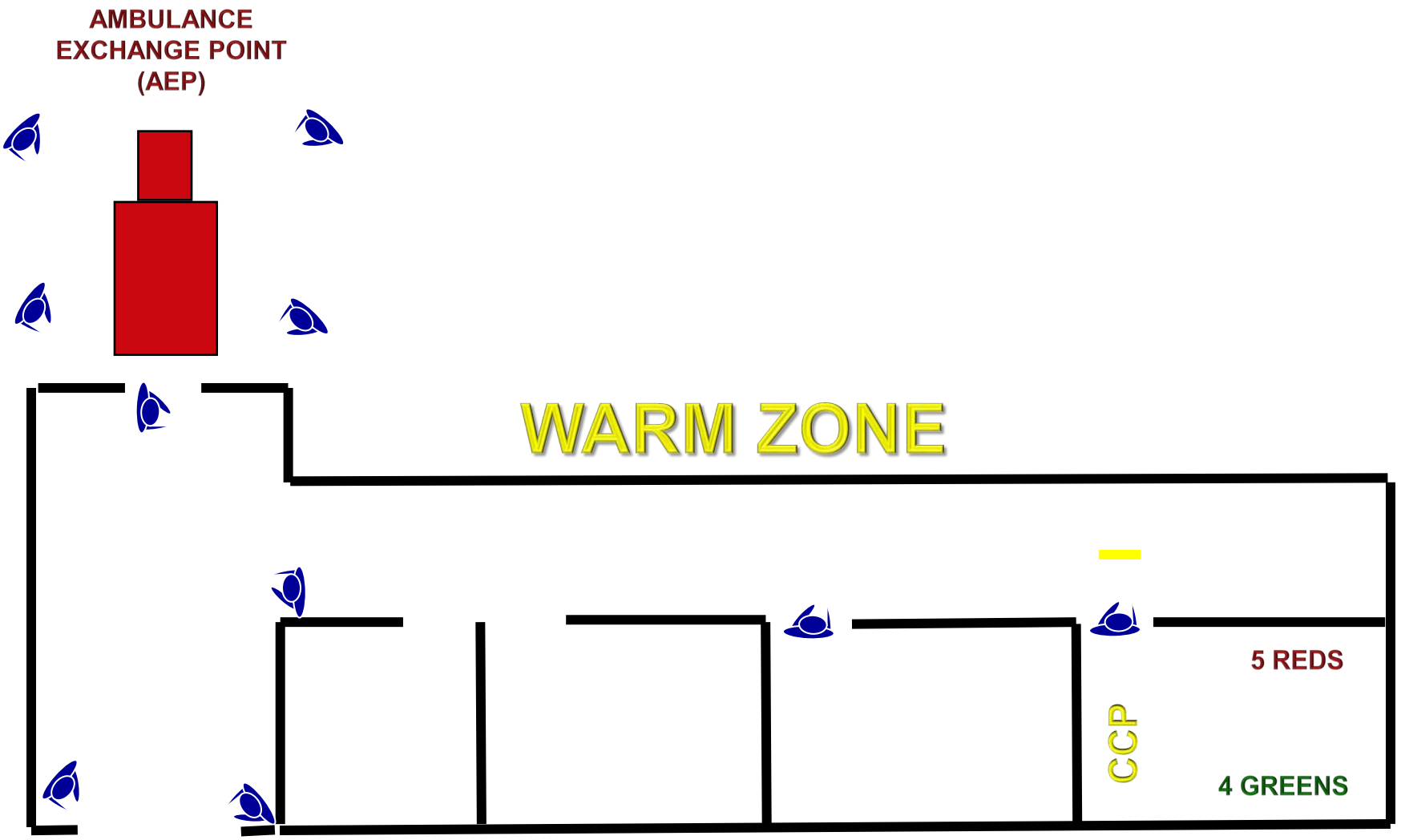
Evacuation from CCP to AEP



Circulation/Massive eXsangiunation

Agitation/AMS

Skin Color

- Pale, Cool, Sweaty?

Vital Signs

- Blood Pressure
  - Permissive Hypotension (Penetrating ~100mmHg) in absence of bad head injury
- Pulses
  - How to check and what does it mean

Signs of Significant Bleeding

- Internal: rigid abdomen, bruising to flanks, unstable pelvis, wet lungs, swollen thighs) blood from rectum/groin

Temperature

- Trauma Triad of Death
  - Hypothermia , Acidosis, Coagulopathy

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Recognition and Management of Shock in Trauma

Hypovolemic

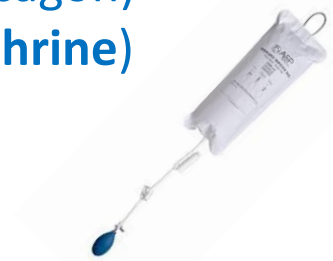
- Bleeding out (internal or external)
- Stop source: **TQ**, Judicious IVF, splinting fractures (long, pelvic)

Obstructive

- T's of cardiac arrest (tamponade, tension PTX, thrombosis)
- Relieve obstruction: **pericardiocentesis**, thoracentesis (needle, **chest tube**)

Neurogenic/Spinal

- Wipes out body's sympathetic tone ("fight or flight" response)
- Low BP without tachycardia (?BB use → Glucagon)
- Provide lots of IVF and vasopressors (**epinephrine**)



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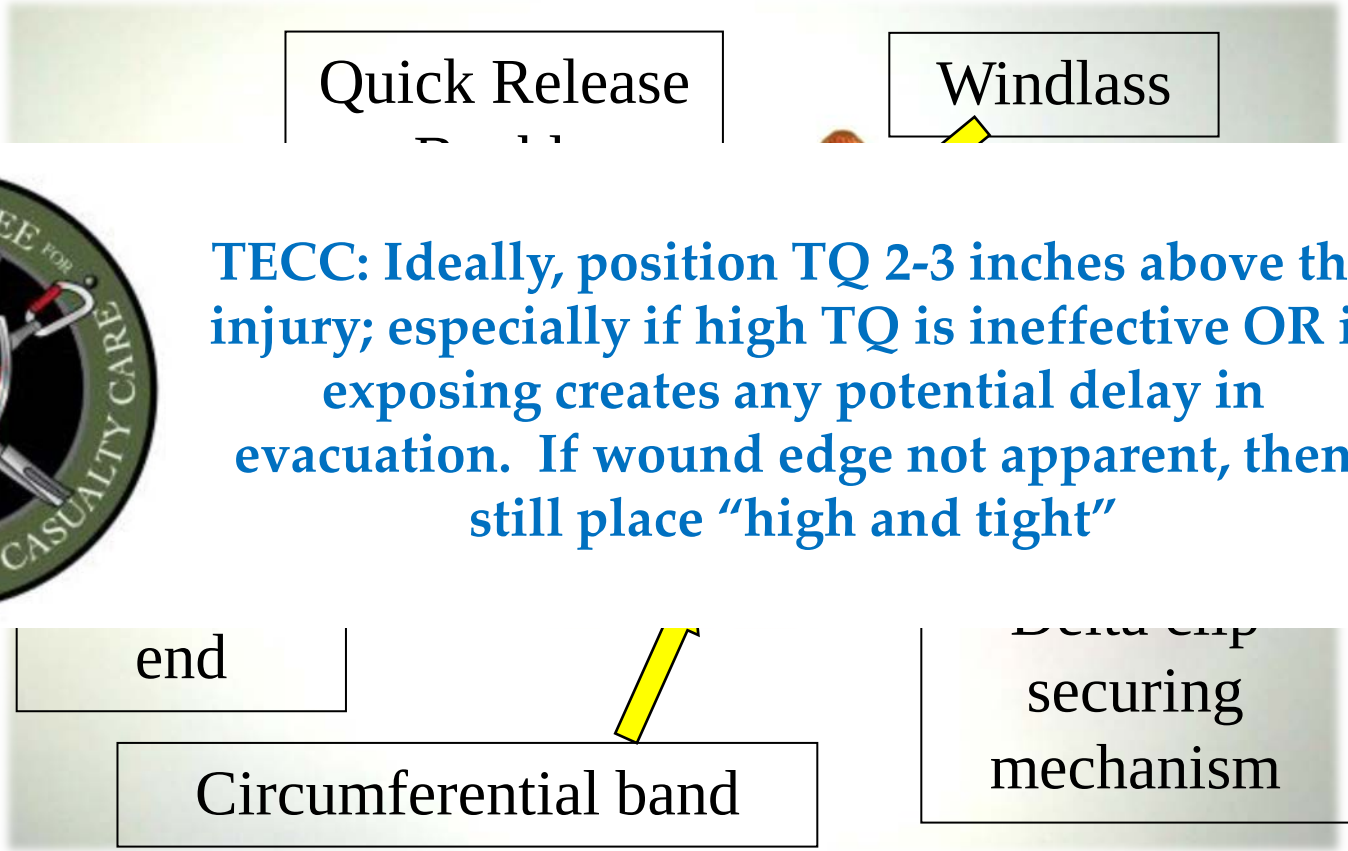
Parts of Tourniquet (SOF-T)



TECC: Ideally, position TQ 2-3 inches above the injury; especially if high TQ is ineffective OR if exposing creates any potential delay in evacuation. If wound edge not apparent, then still place "high and tight"

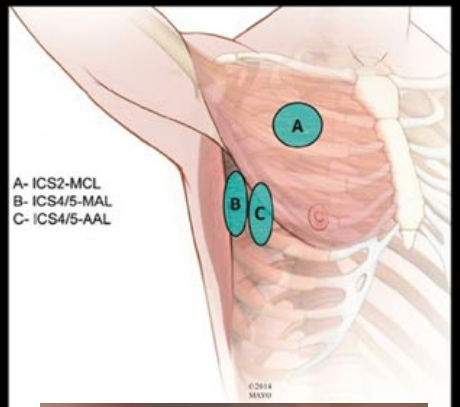
https://www.c-tecc.org

Needle Thoracostomy (Paramedics)

Needle Thoracostomy Failure

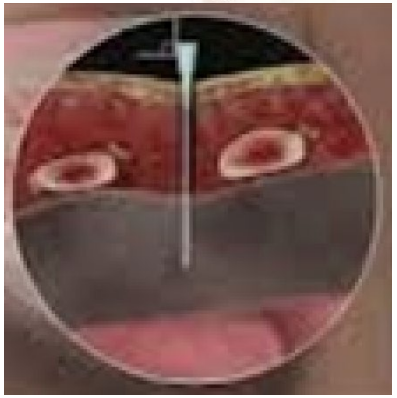
Location	Chest Wall Thickness (cm)	Failure Rate with 5 cm Angiocatheter
2nd ICS – MCL	4.3 (3.9 – 4.7)	38% (24 – 54%)
4th/5th ICS – MAL	4.0 (2.9 – 5.1)	31% (10 – 64%)
4th/5th ICS – AAL	3.4 (2.8 – 4.0)	13% (8 – 22%)

2nd ICS – MCL = 2nd Intercostal Space – Mid-Clavicular Line
4th/5th ICS – MAL = 4th/5th Intercostal Space – Mid-Axillary Line
4th/5th ICS – AAL = 4th/5th Intercostal Space – Anterior-Axillary Line



BOTTOM LINE: Evidence from Observational Studies Suggests that 4th/5th ICS-AAL has Lowest Predicted Failure Rate of Needle Decompression with a Standard 5-cm Angiocatheter

@srrezaie



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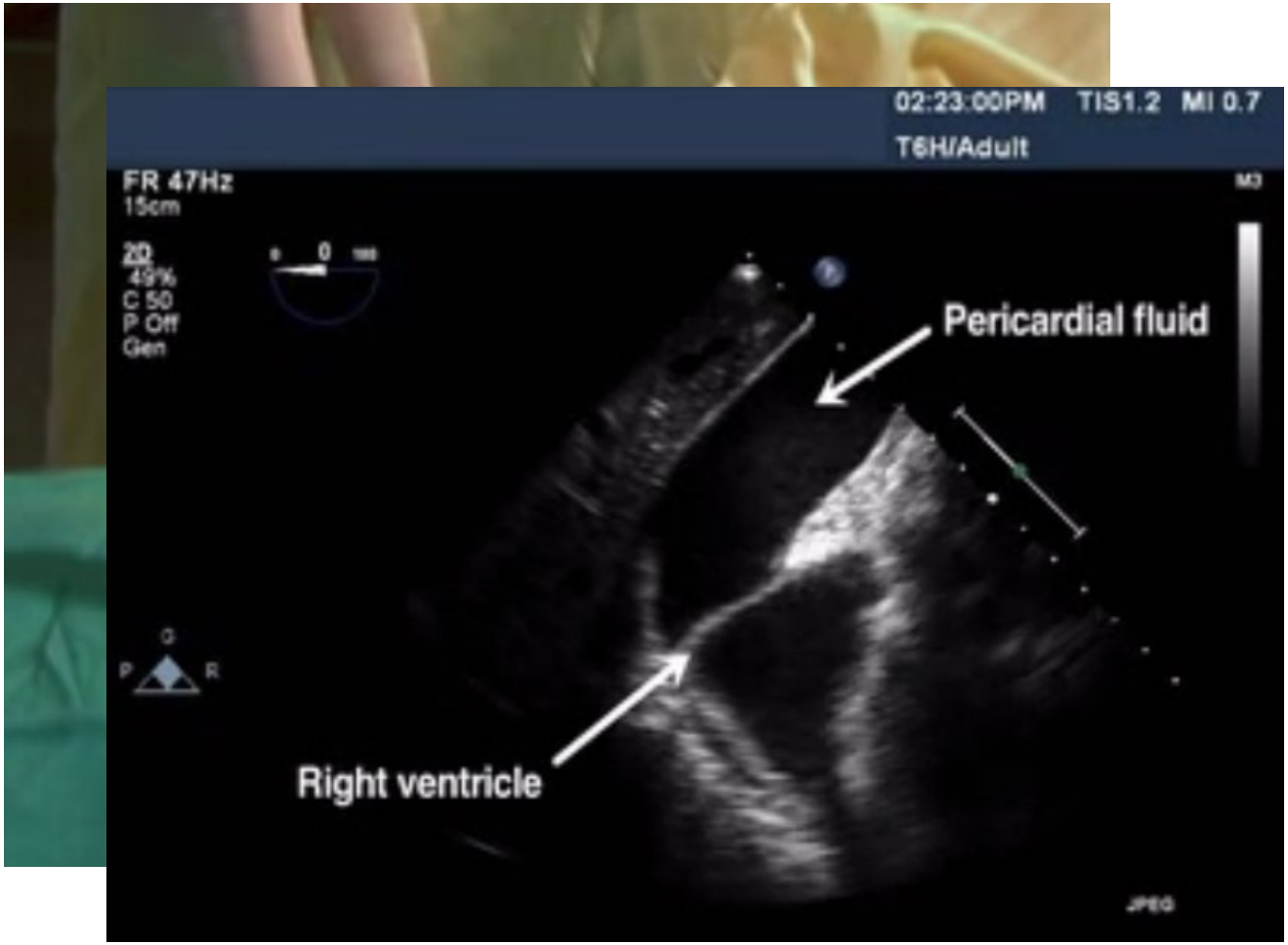
Pericardiocentesis (Paramedics)



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Tools Summary: IFAK Components

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Head to Toe Exam

What are we interested in checking for on a trauma patient?

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Forms of Injury

DCAP- BTLS

- Deformities
- Contusions
- Abrasions
- Punctures and Penetrations
- Burns
- Tenderness
- Lacerations
- Swelling

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Significant Signs on Physical Exam

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Significant Signs on Physical Exam

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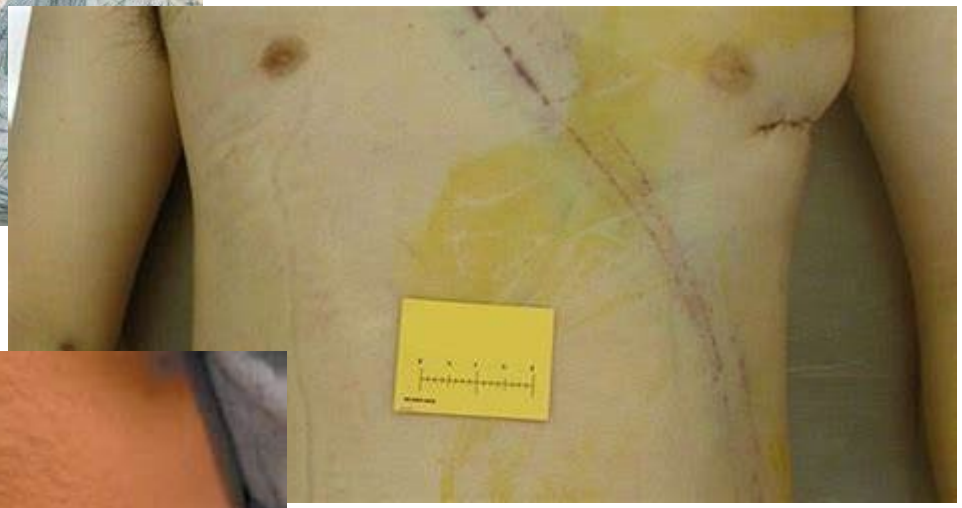
Significant Signs on Physical Exam



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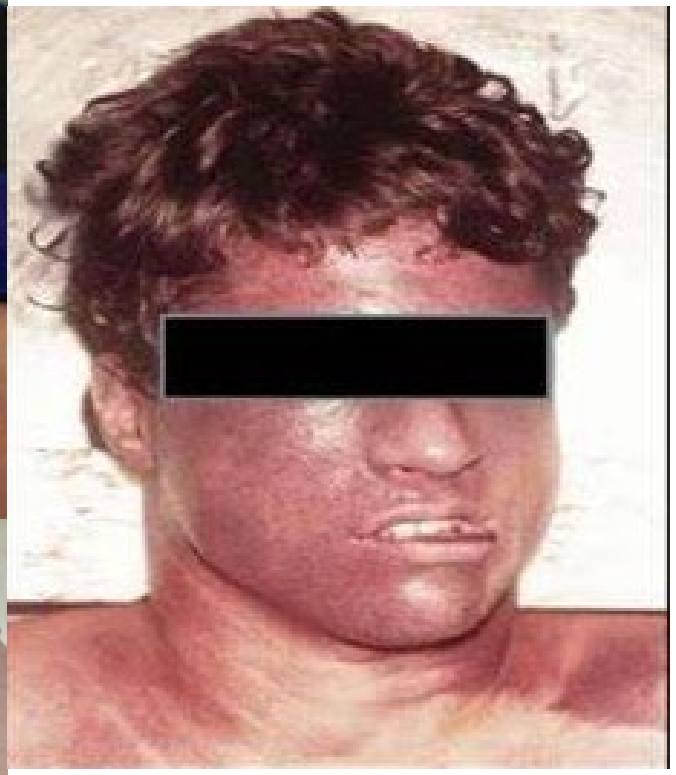
Significant Signs on Physical Exam



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Significant Signs on Physical Exam

Signs and Symptoms of Strangulation

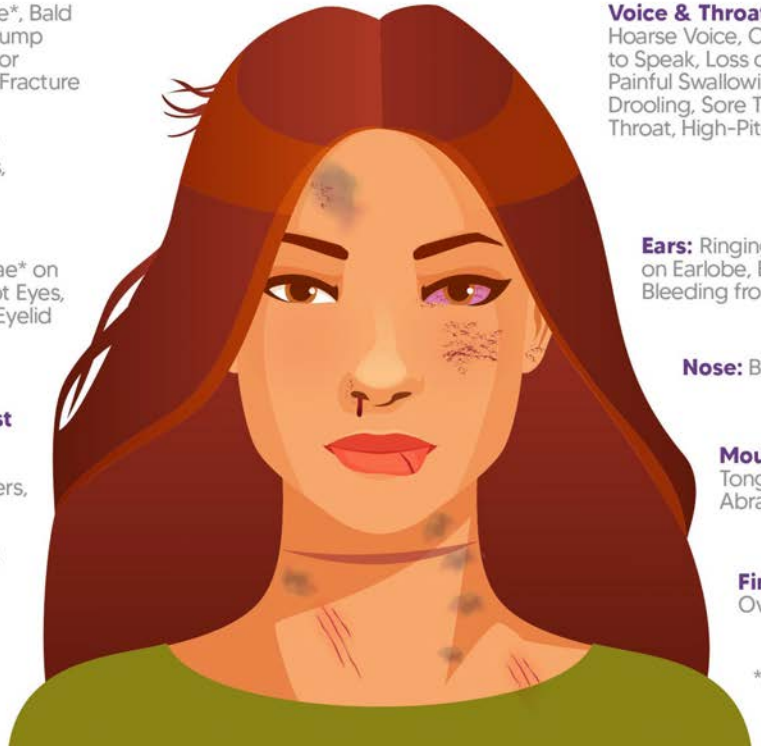
Head & Scalp: Petechiae*, Bald Spots from Hair Pulling, Bump from Blunt Force Trauma or Falling, Concussion, Skull Fracture

Face: Petechiae*, Slightly Red/Florid, Scratch Marks, Facial Drooping, Swelling

Eyes & Eyelids: Petechiae* on Eyeball/Eyelids, Bloodshot Eyes, Vision Changes, Droopy Eyelid

Under Chin, Neck, Chest & Shoulders: Redness, Scratch Marks, Bruise(s) Made by Thumbs or Fingers, Abrasion(s), Fingernail Impressions, Swelling, Ligature Marks, Neck Pain

Breathing Changes: Difficulty Breathing, Inability to Breathe, Hyperventilation



Voice & Throat Changes: Raspy/ Hoarse Voice, Coughing, Inability to Speak, Loss of Voice, Trouble/ Painful Swallowing, Nausea, Vomiting, Drooling, Sore Throat, Clearing the Throat, High-Pitched Wheezing

Ears: Ringing Sound, Petechiae* on Earlobe, Bruising Behind the Ear, Bleeding from the Ear

Nose: Bloody, Broken, Petechiae*

Mouth: Bruising, Swollen Tongue/Lips, Cuts/ Abrasions, Petechiae*

Fingertips: Faint Circular/ Oval Bruises

*Petechiae - Red Spots

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Cervical Spinal Clearance

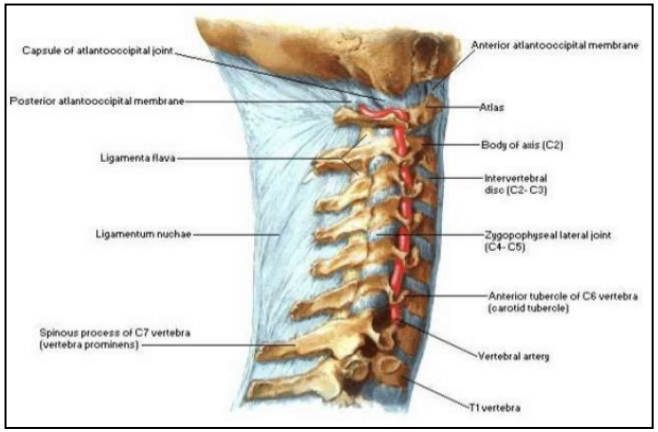


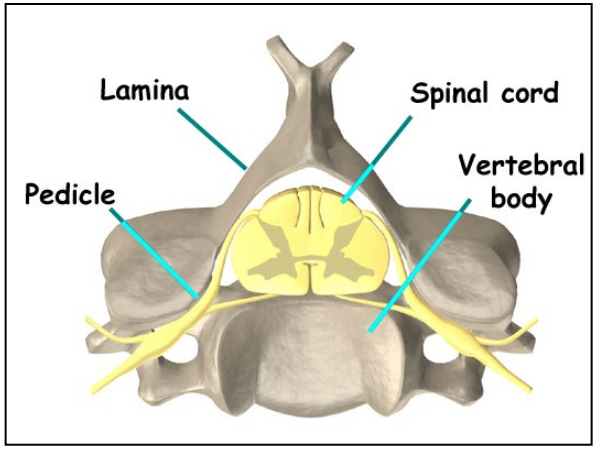
Table 2. NEXUS Criteria For Radiographic Evaluation Of The Cervical Spine Following Blunt Trauma[81]

1. Midline cervical tenderness
2. Focal neurologic deficits
3. Altered level of consciousness
4. Evidence of intoxication
5. Painful distracting injury

Table 4. Canadian Criteria For Detecting Clinically Important Cervical Spine Injury[46]

High Risk Factors	• Age > 65 • Fall > 1 meter • Axial loading injury • High speed MVC/ rollover/ejection • Motorized recreational vehicle or bike collision • Presence of paresthesias

Low Risk Factors	• Simple rear-end MVC
	  • Not pushed into oncoming traffic
	  • Not hit by large bus or truck
	  • No rollover
	  • Not hit by high-speed vehicle
	• Sitting position in the ED
	• Ambulatory anytime
	• Delayed onset of neck pain
	• No midline cervical tenderness



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Management of Puncture Wounds

- Eye
- Neck
- Chest
- Abdomen

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Partial Amputations

Mangled Extremity Severity Score (MESS)

- from Johansen, et al. (1990)

Skeletal / soft-tissue injury
- Low energy (stab; simple fracture; pistol gunshot wound): 1
- Medium energy (open or multiple fractures, dislocation): 2
- High energy (high speed MVA or rifle GSW): 3
- Very high energy (high speed trauma + gross contamination): 4

Limb ischemia
- Pulse reduced or absent but perfusion normal: 1*
- Pulseless; paresthesias, diminished capillary refill: 2
- Cool, paralyzed, insensate, numb: 3*

Shock
- Systolic BP always > 90 mm Hg: 0
- Hypotensive transiently: 1
- Persistent hypotension: 2

Age (years)
- < 30: 0
- 30-50: 1
- > 50: 2

*** Score doubled for ischemia > 6 hours**

Limb salvage versus amputation. Preliminary results of the Mangled Extremity Severity Score.

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Reimplantation Considerations

- The amputated part, size
- Degree of vascular injury
- Time elapsed
- Projected disability, baseline functionality
- Co-morbid conditions, risks

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Burn Management

- Scene safety
- ABC's (intubate early if indicated)
- Stop the burning process
- Remove clothing and jewelry
- May flush small areas with room temperature water or saline for a few minutes
- Cover area with clean dry sheet/dressing
- Vascular access & warm fluids – 500ml/hr adults, 250ml/hr children, 125ml/hr infants
  - Bolus only for hypotension
- Address other injuries
- Pain control
- Transport

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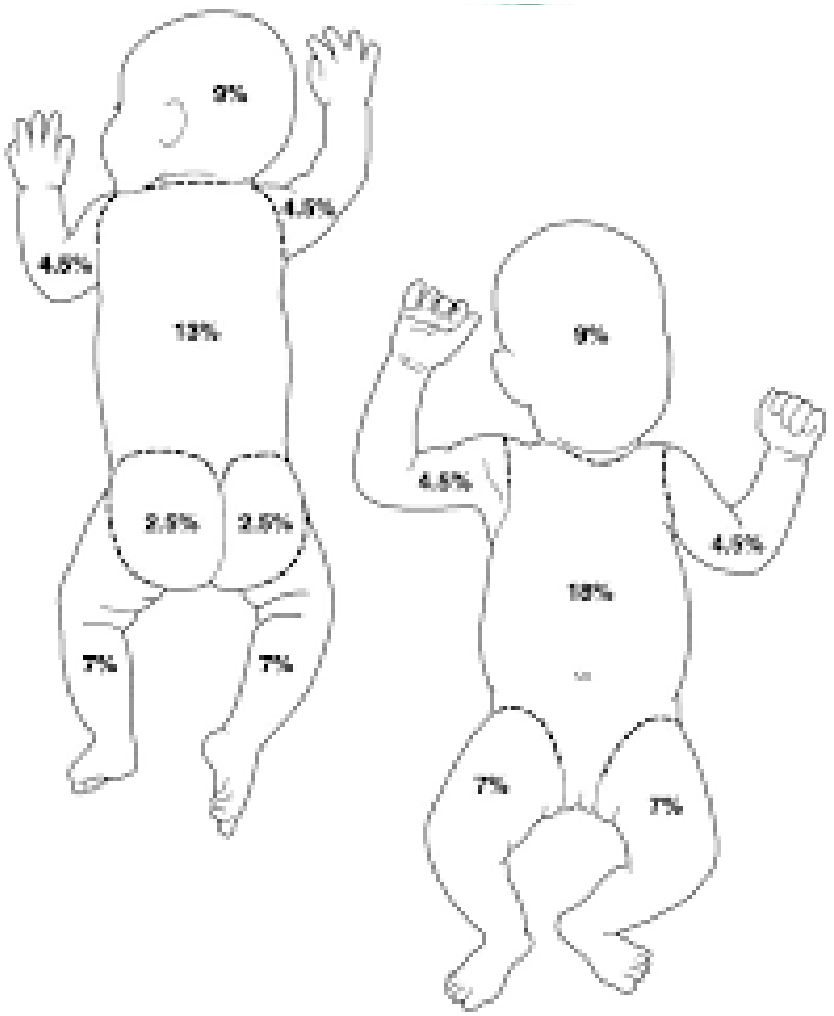
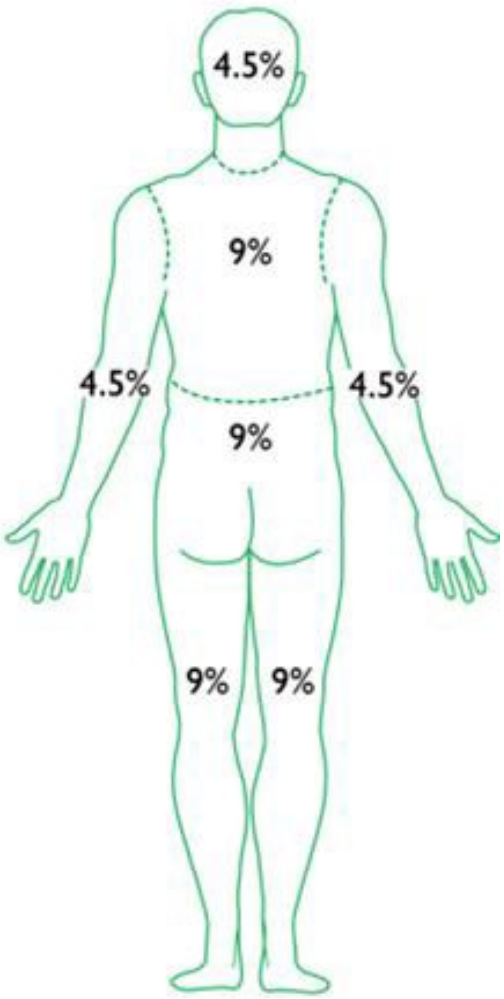
Estimated Body Surface Area





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Surgeon: Escharotomy

Figure 4. This figure demonstrates appropriate chest escharotomy. Notice the amount chest wall expansion following escharotomy, i.e. the skin gap seen at the sight of escharotomy.

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What do these mechanisms have in common?

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Crush Syndrome

The systemic manifestation of muscle cell damage with subsequent toxin releas
a result of a preceding crush

→ Rapid metabolic changes

- Compartment Syndrome
- Acidosis
- Hypothermia
- Coagulopathy
- Rhabdomyolysis
- Renal Failure
- Hyperkalemia
- Hypovolemia (Hemorrhagic
- Death

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Trauma: Rapid Transport is Important

- Many patients need higher level of services and/or definitive care (surgery)
- Goal On Scene Time: **less than 10 minutes**, exceptions:
  - Life saving interventions
  - Extrication/ entrapment
  - Crush Injuries

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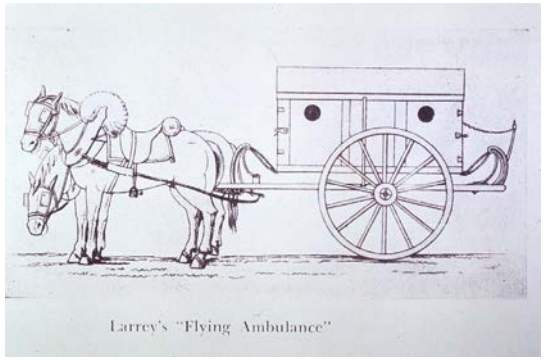
https://www.blessinghealth.org

The Origin of Triage

- “Ambulance Volante” & battlefield tactics (1800s)
- The greater good for the greater number rather than the particular good for the individual (AJ & KE, Univ. of Washington School of Med, 2011)
- The sorting of and allocation of treatment to patients and especially battle and disaster victims according to a system of priorities designed to maximize the number of survivors (Merriam-Webster, 2017)



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Sort and THEN WHAT?!

- We need to distinguish what needs to be done immediately, while on scene, while en route, or at a hospital with the capability.
- Is it too late or futile?
  - The sooner we begin treating, the better.

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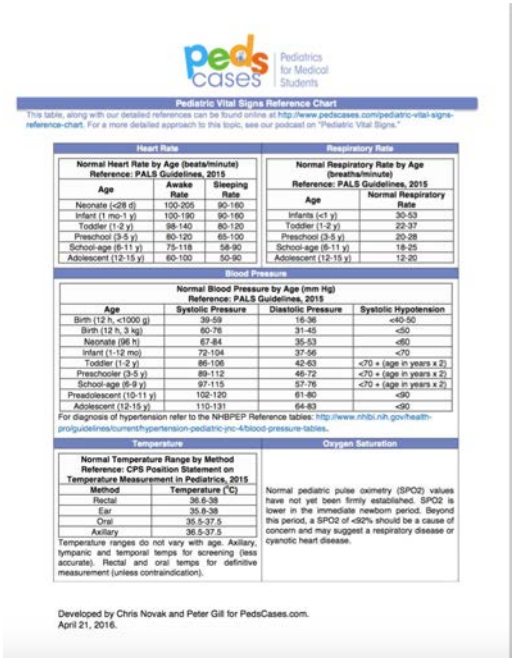
Timeliness & Feasibility

- Triage must be performed rapidly
  - Within 20-30 seconds per person
- Triage tools must be easy to remember and apply

Table II: Glasgow Coma Score or PGCS			
	Infant <1 yr	Child 1-4yrs	Age 4–Adult
EYES			
4	Open	Open	Open
3	To voice	To voice	To voice
2	To pain	To pain	To pain
1	No response	No response	No response
VERBAL			
5	Coos, babbles	Oriented, speaks, interacts, social	Oriented and alert
4	Irritable cry, consolable	Confused speech, disoriented, consolable	Disoriented
3	Cries persistently to pain	Inappropriate words, inconsolable	Nonsensical speech
2	Moans to pain	Incomprehensible, agitated	Moans, unintelligible
1	No response	No response	No response
MOTOR			
6	Normal, spontaneous movement	Normal, spontaneous movement	Follows commands
5	Withdraws to touch	Localizes pain	Localizes pain
4	Withdraws to pain	Withdraws to pain	Withdraws to pain
3	Decorticate flexion	Decorticate flexion	Decorticate flexion
2	Decerebrate extension	Decerebrate extension	Decerebrate extension
1	No response	No response	No response



peds cases — Pediatrics for Medical Students

Pediatric Vital Signs Reference Chart

This table, along with our detailed references can be found online at http://www.pedscases.com/pediatric-vital-signs-reference-chart. For a more detailed approach to this topic, see our podcast on "Pediatric Vital Signs."

Heart Rate

Normal Heart Rate by Age (beats/minute) Reference: PALS Guidelines, 2015

Age	Awake Rate	Sleeping Rate
Neonate (<28 d)	100-205	90-160
Infant (1 mo-1 y)	100-190	90-160
Toddler (1-2 y)	98-140	80-120
Preschool (3-5 y)	80-120	65-100
School-age (6-11 y)	75-118	58-90
Adolescent (12-15 y)	60-100	50-90

Respiratory Rate

Normal Respiratory Rate by Age (breaths/minute) Reference: PALS Guidelines, 2015

Age	Normal Respiratory Rate
Infants (<1 y)	30-53
Toddler (1-2 y)	22-37
Preschool (3-5 y)	20-28
School-age (6-11 y)	18-25
Adolescent (12-15 y)	12-20

Blood Pressure

Normal Blood Pressure by Age (mm Hg) Reference: PALS Guidelines, 2015

Age	Systolic Pressure	Diastolic Pressure	Systolic Hypotension
Birth (12 h, <1000 g)	39-59	16-36	<40-50
Birth (12 h, 3 kg)	60-76	31-45	<50
Neonate (96 h)	67-84	35-53	<60
Infant (1-12 mo)	72-104	37-56	<70
Toddler (1-2 y)	86-106	42-63	<70 + (age in years x 2)
Preschooler (3-5 y)	89-112	46-72	<70 + (age in years x 2)
School-age (6-9 y)	97-115	57-76	<70 + (age in years x 2)
Preadolescent (10-11 y)	102-120	61-80	<90
Adolescent (12-15 y)	110-131	64-83	<90

For diagnosis of hypertension refer to the NHBPEP Reference tables: http://www.nhlbi.nih.gov/health-pro/guidelines/current/hypertension-pediatric-jnc-4/blood-pressure-tables.

Temperature

Normal Temperature Range by Method Reference: CPS Position Statement on Temperature Measurement in Pediatrics, 2015

Method	Temperature (°C)
Rectal	36.6-38
Ear	35.8-38
Oral	35.5-37.5
Axillary	36.5-37.5

Temperature ranges do not vary with age. Axillary, tympanic and temporal temps for screening (less accurate). Rectal and oral temps for definitive measurement (unless contraindication).

Oxygen Saturation

Normal pediatric pulse oximetry (SPO2) values have not yet been firmly established. SPO2 is lower in the immediate newborn period. Beyond this period, a SPO2 of <92% should be a cause of concern and may suggest a respiratory disease or cyanotic heart disease.

Developed by Chris Novak and Peter Gill for PedsCases.com.
April 21, 2016.

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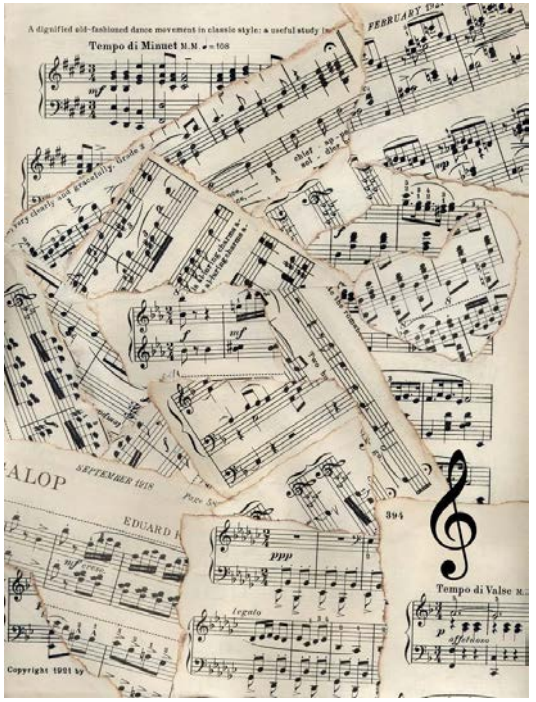
Interoperability

- A core principle of NIMS ICS
- Essential for collaboration and efficiency between agencies
- Clear communication, speaking the same language, same practices



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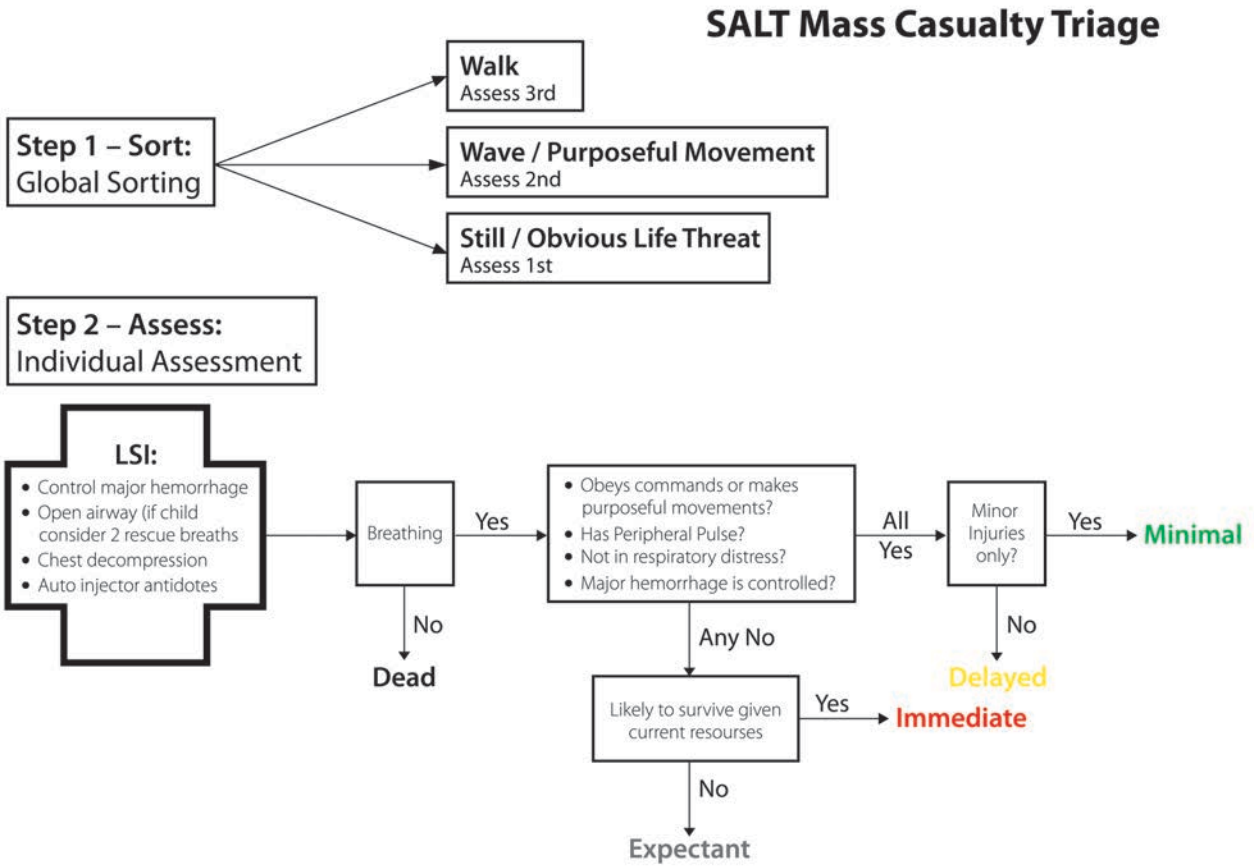
SALT Triage Algorithm



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Advantageous Features of SALT

- Priority pattern of assessment
- Initial interventions are in line with TECC thought process in tactical yellow/warm zone, austere environment
- Treating while you triage, not just after → increases chances of survival
- Simple assessment tools, no #s = less to remember or calculate, for all patient groups
- Addition of Grey (Expected) category

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Triage Categories

What do they mean clinically?

GREEN (Minimal) – Minor injuries that can wait for receiving any treatment (several hours) ex: sprain, abrasions

YELLOW (Delayed) – Potentially serious, but able to wait a short while for further assessment ex: closed wrist fracture

RED (Immediate) – life-threatening but treatable injuries requiring immediate medical attention ex: tension PTX

GREY (Expectant) – Unlikely to survive to tertiary care despite all possible care given by available prehospital resources

BLACK (Dead) – Not breathing despite open airway; unless injuries incompatible with life, may be reassessed once resources available.

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What's the Process?

- 4 Steps:
  1. Sort
  2. Assess
  3. Life-Saving Interventions
  4. Treatment/Transport

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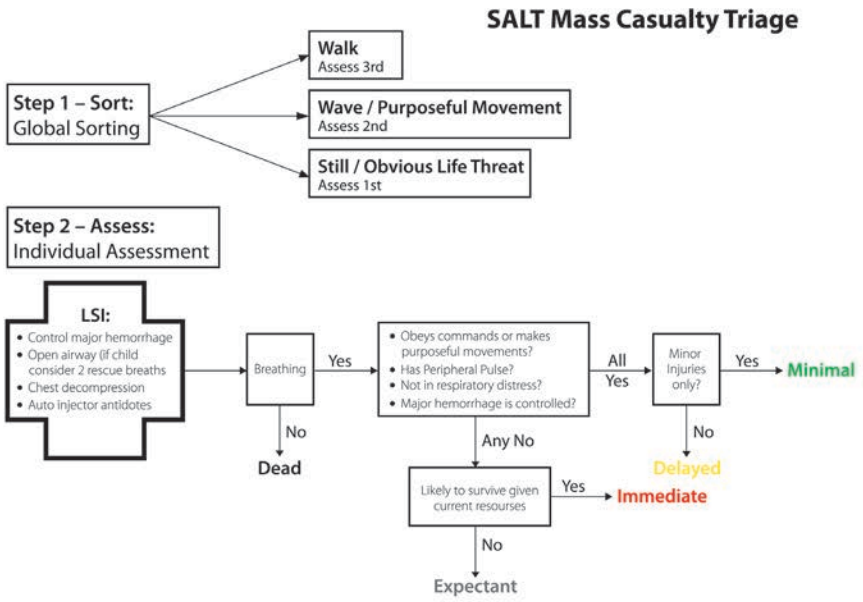

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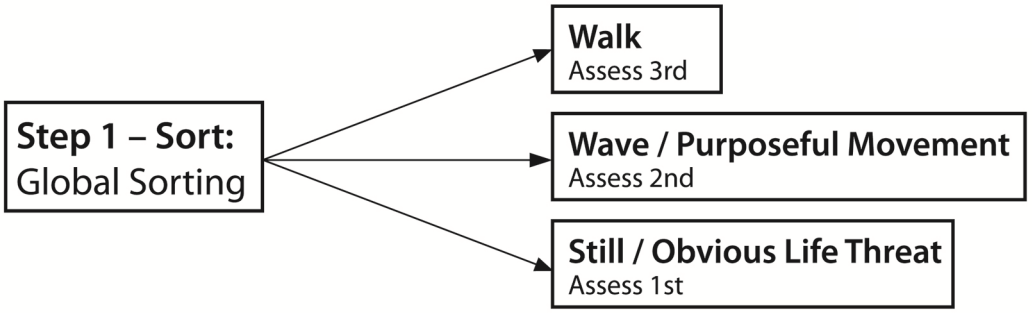
STEP 1



SORT

- Ask those who can walk to move to a designated area
  - This does NOT mean “walking wounded” (no triage category assigned yet)
- Determine who can wave or move at all
  - Some less injured may not follow your verbal stimuli (tympanic rupture, language barrier, stay together)
- Those who lay still will be assessed FIRST!

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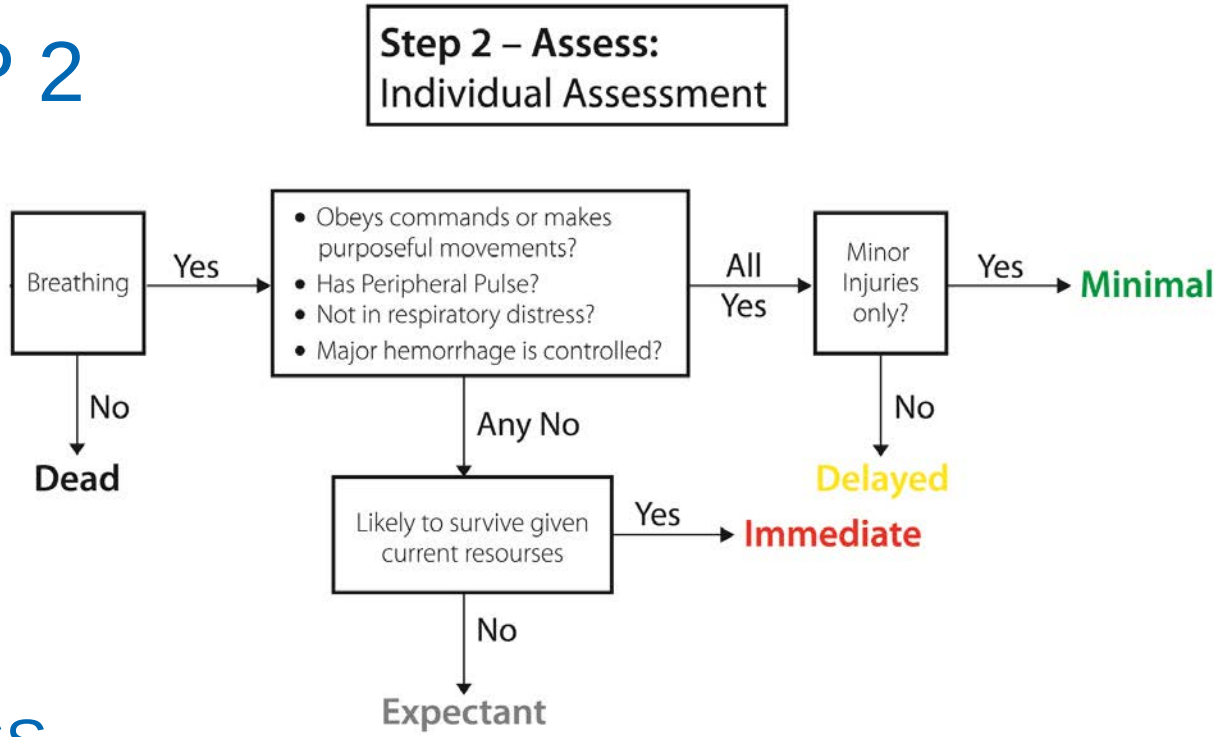
STEP 2



ASSESS

- Follow chart left to right
- Consider giving two rescue breaths if able
- Dead and expectant criteria will depend on SMGs and dynamics of available resources

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STEP 3

LIFE-SAVING INTERVENTIONS

- Control major hemorrhage
- reaths)
- teral)

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STEP 4

LSI:

- Control major hemorrhage
- Open airway (if child consider 2 rescue breaths
- Chest decompression
- Auto injector antidotes

TREATMENT / TRANSPORT

- Should begin with rechecking ABCD's
- Perform/repeat any LSI needed
- Determine level of care provider needed
- Stabilize as best able
- Administer TXA for signs of shock
- Rapid Transport to appropriate center

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Now Let's Practice!

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What do you do?

Everyone who can walk, go over there!

…If you can hear me, wave an arm in the air!

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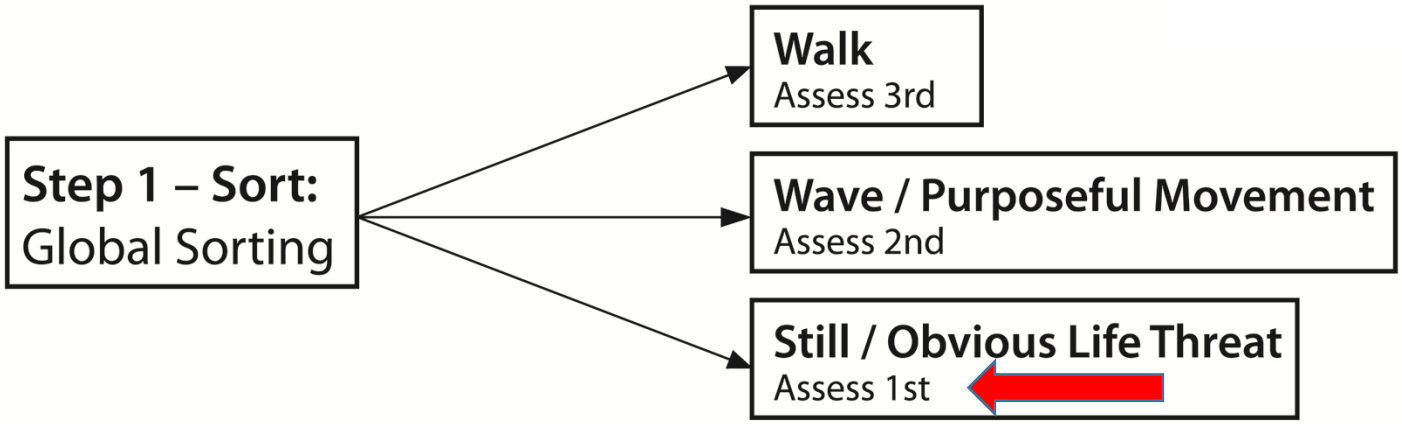
Remember…



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Patient 1

A 37 y/o female with a large lower extremity injury, demonstrating an uncontrolled arterial hemorrhage but has a pulse and can follow commands. The hemorrhage can likely be temporized with available bleeding control measures.

LSI:

- Control major hemorrhage
- Open airway (if child consider 2 rescue breaths
- Chest decompression
- Auto injector antidotes

RED – APPLY TOURNIQUET;

If bleeding controlled → YELLOW

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Patient 2

An approx 40 y/o male lies still with his lower body trapped under a piece of the wreckage that is too heavy for several people to lift. He does not appear to be breathing and remains apneic with a modified jaw thrust.

BLACK – TAG & KEEP MOVING

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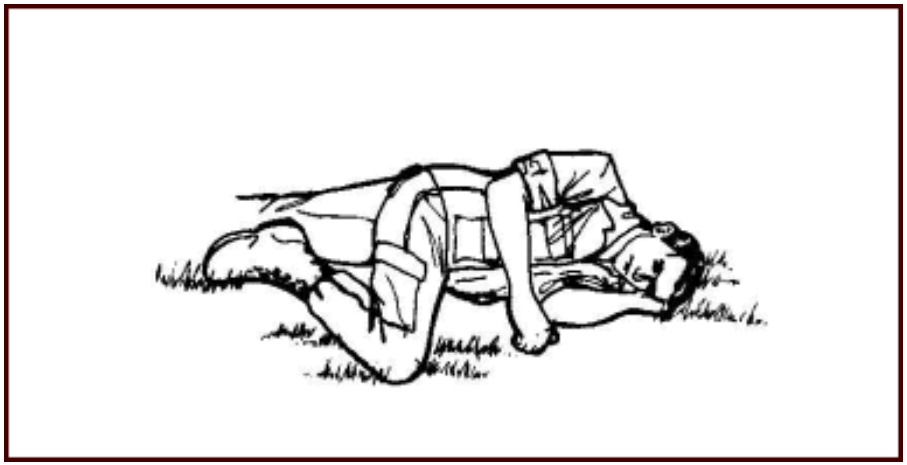
Patient 3

16 y/o male was struck in the head by debri, is posturing, has open wound to skull with exposed brain matter. You appreciate a weak pulse and agonal respirations.



GREY – TAG & KEEP MOVING

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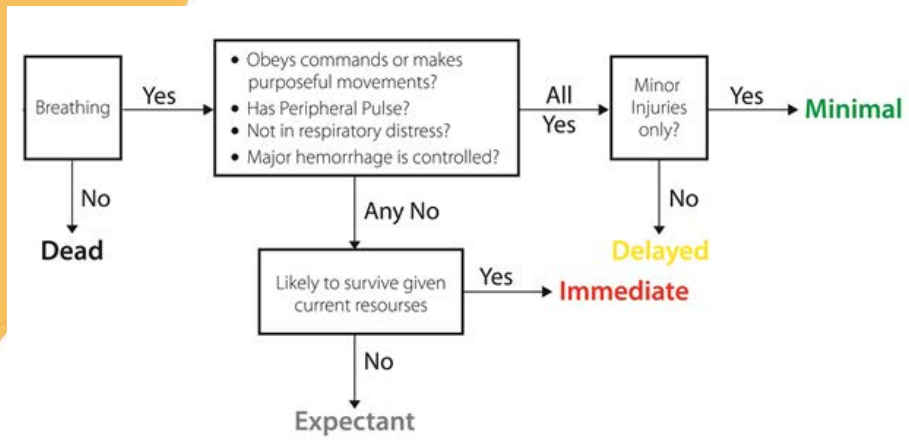
Patient 4

A young adult male props himself up on the road and signals you for help. He has an obvious closed deformity of both lower legs. On closer examination, his distal pulses are intact, there is no obvious major hemorrhage, and he is not in respiratory distress.



YELLOW – TAG & KEEP MOVING

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Patient 5

A school-aged girl crawls out of the wreckage. She's able to stand and walk toward you crying. Her clothes are torn and she has some abrasions to face, but no other obvious injuries.

What else do you want to know?

- She can obey commands
- No signs of significant respiratory distress
- *…She must have a pulse.*

GREEN – TAG & KEEP MOVING

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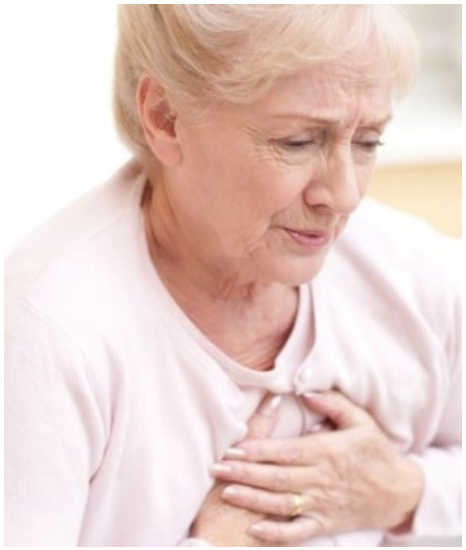
Patient 6

62 y/o female is walked over to you with a bystander c/o shortness of breath and chest pain. She has h/o heart problems. She obeys commands, has strong pulses, breathing is a little labored, no apparent injuries.



RED – Perform EKG when able

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More patients than there are colors!

- 2-3 red patients, only 1 standby ambulance on scene… so who's going first?

- Some considerations:
  - Most time-sensitive condition
  - Prehospital point-of-care ultrasound can identify patients who may benefit the most from interventions, thus improving accuracy and decreasing uncertainty based on physical exam (Kimberly HH, Stone MB. Clinician-performed ultrasonography during the Boston marathon bombing mass casualty incident. *Ann Emerg Med* 2013;62:199-200).
  - Physician evaluation on scene
  - Need for specialty center

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Common Transport Priority Decision Factors

- Neurosurgical (Severe TBI)
- Ongoing Stability
- Pediatrics / Neonatal
- Pregnancy
- Severe Burns
- Family Together

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Prehospital Advanced Resources

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Prehospital to Hospital Communication

- How is your relationship with local/regional hospitals?
- Where do you take patients?
- How do you establish/communicate an MCI?
- What mutual aid plans are in place?
- How do you know real-time ED capacity?
- How many patients per ambulance?
- How many patients went via PV/LE?

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Interactive Talk & Skills Practice

Hands on skills practice:

- Local RTF Pre-Planning
  - Brief group discussion - What would you do? Who would respond? When would you enter? Do you feel comfortable/prepared/equipped? Next steps in your community?
- Trauma Patient Scenario
  - Simulation manikin with instructor
- Sample SALT patients
  - Small group discussion (best answer)

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