

Track 2 – Triage

JumpSTART Pediatric Triage System


Friday, February 4, 2005 2:30pm ~ 3:30pm



Jump START


Pediatric Multicasualty Triage System

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South Florida Regional DMAT/IMSURT South
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Earthquake, Algeria


Earthquake, Iran




Earthquake, Italy




Tsunami, Indonesia




Building collapse, Jerusalem



Tornado, Kansas





Bus crash, Michigan



Moscow theater siege


Beslan school siege





OKC Bombing





We must assume each MCI will include children.

We must be able to assess and treat victims of *all* ages with equal confidence and competence.

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What's your call?



Photos by Bryan Patrick, The Sacramento Bee, 2000

What's your call?

A bus carrying school children of various ages and their chaperones on a field trip loses control, slams into a median, then rolls.

You are the triage officer.

What's your call?

- **A young school aged boy is found lying on the roadway 10 ft from the bus.**
- **Breathing 10/min**
- **Good distal pulse**
- **Groans to painful stimuli**

What's your call?

- **An adult kneels at the side of the road, shaking his head. He says he's too dizzy to walk.**
- **RR 20**
- **CR 2 sec**
- **Obeys commands**

What's your call?

- **A school aged girl crawls out of the wreckage. She's able to stand and walk toward you crying.**
- **Jacket and shirt torn**
- **No obvious bleeding**

What's your call?

- **A toddler lies with his lower body trapped under a seat inside the bus.**
- **Apneic**
- **Remains apneic with modified jaw thrust**
- **No pulse**

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What's your call?

- **Adult female driver still in the bus, trapped by her lower legs under caved-in dash.**
- **RR 24**
- **Cap refill 4 sec**
- **Moans with verbal stimulus**

What's your call?

- **A toddler lies among the wreckage.**
- **RR 50**
- **Palpable distal pulse**
- **Withdraws from painful stimulus**

What's your call?

- **A woman is carrying a crying infant. She is able to walk.**
- **RR 20**
- **CR 2 sec**
- **Obeys commands**

What's your call?

- **An infant is carried by the previous victim.**
- **He's screaming but the woman quiets him to RR of 34**
- **Good distal pulse**
- **Focuses on rescuer, reaches for mom.**
- **No obvious significant external injuries.**

What's your call?

- **A young school aged boy props himself up on the road.**
- **RR 28**
- **Good distal pulse**
- **Answers question and commands.**
- **Has obvious deformity of both lower legs.**

What's your call?

- **A toddler is found outside the bus, lying on the ground in a heap.**
- **Apneic**
- **Remains apneic with jaw thrust**
- **Faint distal pulse palpable**

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What's your call?

- A school aged girl lies among the wreckage.
- **RR 40**
- Absent distal pulse
- Withdraws from painful stimulus

What's your call?

- A screaming infant is found among the bushes at the side of the road.
- **RR 38**
- Good distal pulse
- Focuses and reaches for you.
- Has a partial amputation of the foot without active bleeding.

What's your call?

- An adult male lies inside the bus.
- Apneic
- Remains apneic with jaw thrust

What's your call?

- A youngster is up and walking around but is limping
- Alert, crying hysterically for his mother

What's your call?

- A school aged boy lies close to the bus.
- **RR 36**
- Absent distal pulse
- Sluggishly looks at you when you talk to him

What's your call?

- A young teen girl lies among the wreckage, crying for someone to help her up. A man with her says she needs her wheelchair.
- **RR 22**
- Palpable distal pulse
- Alert
- Has minor cuts and bruises

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What's your call?

- An adult male lies on the ground
- RR 20
- Good distal pulse
- Obeys commands but cries that he can't move his legs

What's your call?

- An older school aged child is found sitting outside the bus.
- RR 28
- Good distal pulse
- Groggy, confused and slowly follows commands but won't get up and walk.

Goal of Multicasualty Triage

“To do the best for the most using the least.”


Primary Disaster Triage

- **Goal:** to sort patients based on probable needs for immediate care. Also to recognize futility.
- **Assumptions:**
 - ♦ *Medical needs outstrip immediately available resources*
 - ♦ *Additional resources will become available with time*

Primary Disaster Triage

- Triage based on *physiology*
 - ♦ *How well the patient is able to utilize their own resources to deal with their injuries*
 - ♦ *Which conditions will benefit the most from the expenditure of limited resources*

The physiology of adults and children are not the same.



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Why do we need a pediatric tool?


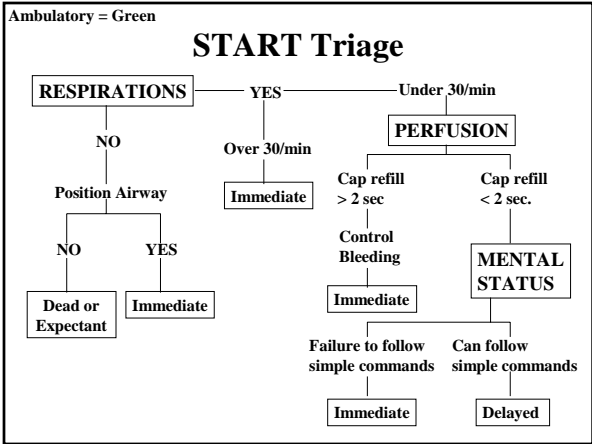
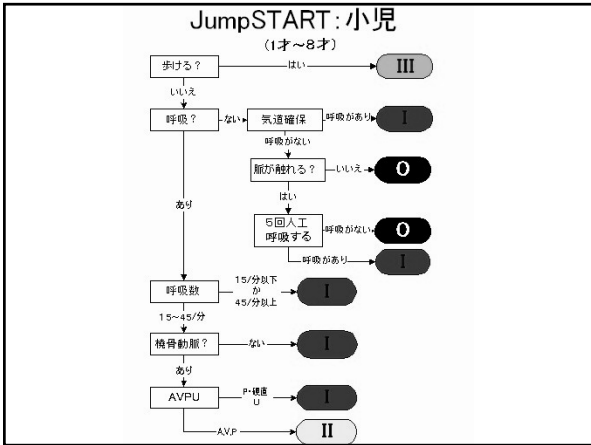
To optimize triage effectiveness to the benefit of *all* victims, not just children.

Why do we need an *objective* pediatric tool?



The pediatric knowledge base and confidence levels of many EMS providers are not as good as they can and should be.

Pediatric multicasualty triage may be affected by the emotional state of triage officers.

START:

Potential Problems with Children

- An apneic child is more likely to have a primary respiratory problem than an adult. Perfusion may be maintained for a short time and the child may be salvageable.
- RR +/- 30 may either over-triage or under-triage a child, depending on age .

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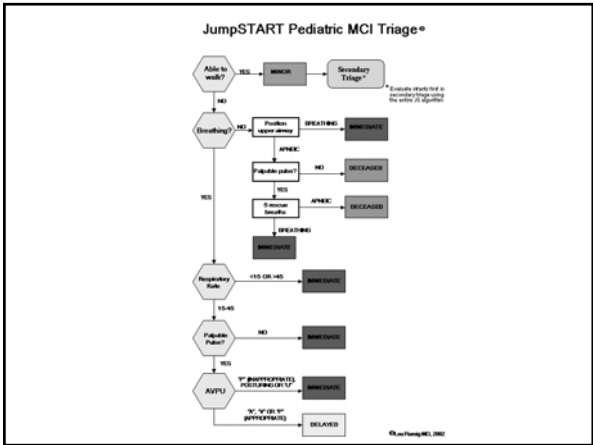
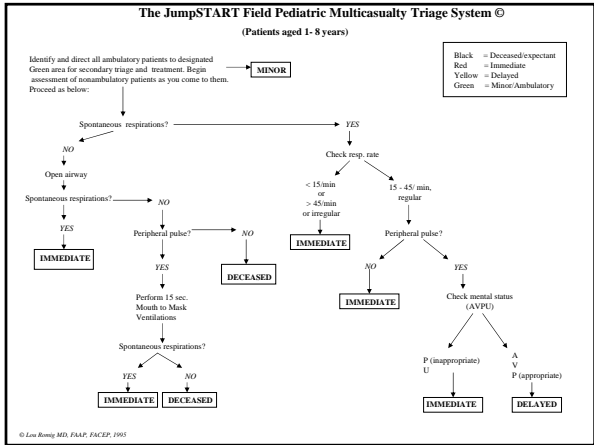
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START: Potential Problems with Children

- Capillary refill may not adequately reflect peripheral hemodynamic status in a cool environment.
- Obeying commands may not be an appropriate gauge of mental status for younger children.

JumpSTART Goals

- Modify an existing tool for use with children
- Utilize decision points that are flexible enough to serve children of all ages and reflective of the unique points of pediatric physiology
- Minimize over- and under-triage
- Accomplish triage within 30 second/pt goal



JumpSTART: Age

- Initially ages 1-8 years chosen
- Less than one year of age is less likely to be ambulatory.
- The pertinent pediatric physiology (specifically, the airway) approaches that of adults by approximately eight years of age.



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JumpSTART: Age

Current recommendation:

*If a victim appears to be a child, use
JumpSTART.*

*If a victim appears to be a young adult,
use START.*

JumpSTART: Ambulatory

**Identify and direct all ambulatory patients
to designated Green area for secondary
triage and treatment. Begin assessment
of nonambulatory patients as you
come to them.**

**Modification for nonambulatory
children**

All children carried to the GREEN area by
other ambulatory victims must be the first
assessed by medical personnel in that area.



JumpSTART: Breathing?

- If breathing spontaneously, go on to the next step, assessing respiratory rate.
- If apneic or with very irregular breathing, open the airway using standard positioning techniques.
- If positioning results in resumption of spontaneous respirations, tag the patient immediate and move on.

The “Jumpstart” Part

- * If no breathing after airway opening, check for peripheral pulse. If no pulse, tag patient deceased/nonsalvageable and move on.
- * If there is a peripheral pulse, give 5 mouth to barrier ventilations. If apnea persists, tag patient deceased/nonsalvageable and move on.
- If breathing resumes after the “jumpstart”, tag patient immediate and move on.

JumpSTART: Respiratory Rate

- If respiratory rate is 15-45/min, proceed to assess perfusion.
- If respiratory rate is <15 or >45/min or irregular, tag patient as immediate and move on.

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JumpSTART:Perfusion

- If peripheral pulse is palpable, proceed to assess mental status.
- If no peripheral pulse is present (in the least injured limb), tag patient immediate and move on.

JumpSTART: Mental Status

- Use AVPU scale to assess mental status.
- If Alert, responsive to Verbal, or appropriately responsive to Pain, tag as delayed and move on.
- If inappropriately responsive to Pain or Unresponsive, tag as immediate and move on.

Modification for nonambulatory children

- Infants who normally can't walk yet
- Children with developmental delay
- Children with acute injuries preventing them from walking *before* the incident
- Children with chronic disabilities

Modification for nonambulatory children

- Evaluate using the JS algorithm
- If any RED criteria, tag as RED.
- If pt satisfies YELLOW criteria:
 - YELLOW if significant external signs of injury are found (ie. deep penetrating wounds, severe bleeding, severe burns, amputations, distended tender abdomen)
 - GREEN if no significant external injury

Individuals with special health care needs may also be MCI victims!




Note for Black Category Victims

Unless clearly suffering from injuries incompatible with life, victims tagged in the **BLACK** category should be reassessed once critical interventions have been completed for RED and YELLOW patients.

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
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
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
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
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
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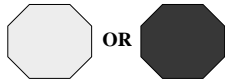
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
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JumpSTART's reception


- In use throughout the US and Canada
- Being taught in Germany, Switzerland, Japan, Polynesia and other countries
- Included in the NDMS Core Curriculum
- Incorporated into the PDLs and APLS courses
- Feature article, July 2002 JEMS magazine
- Included in Brady's *Prehospital Emergency Care, 7th ed*
- Publication in other texts pending

Advantages

- JumpSTART provides a rapid triage system specifically designed for children, taking into consideration their unique physiology.
- The algorithm is modified from an existing system widely accepted for adult triage.
- For most patients, triage can be accomplished within the 30 second goal.

Advantages

- Objective triage criteria for children will help to eliminate the role of emotions in the triage process.
- Objective triage criteria will provide emotional support for triage personnel forced to make life or death decisions for children in the MCI setting.



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Triage is a dynamic process and is usually done more than once.



For more information on JumpSTART:

www.jumpstarttriage.com

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Lectures, algorithms, handouts are available for free download from the website. Algorithm available in English, Spanish, French, Japanese and coming in Italian.