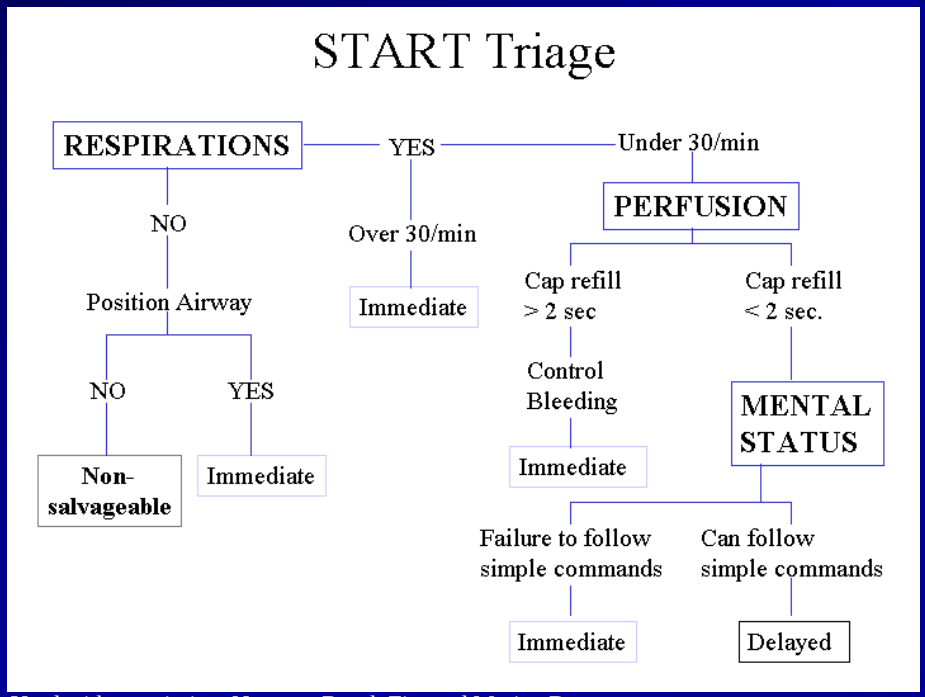
The START and JumpSTART MCI Triage Tools

Photo courtesy of Miami Dade Fire Rescue



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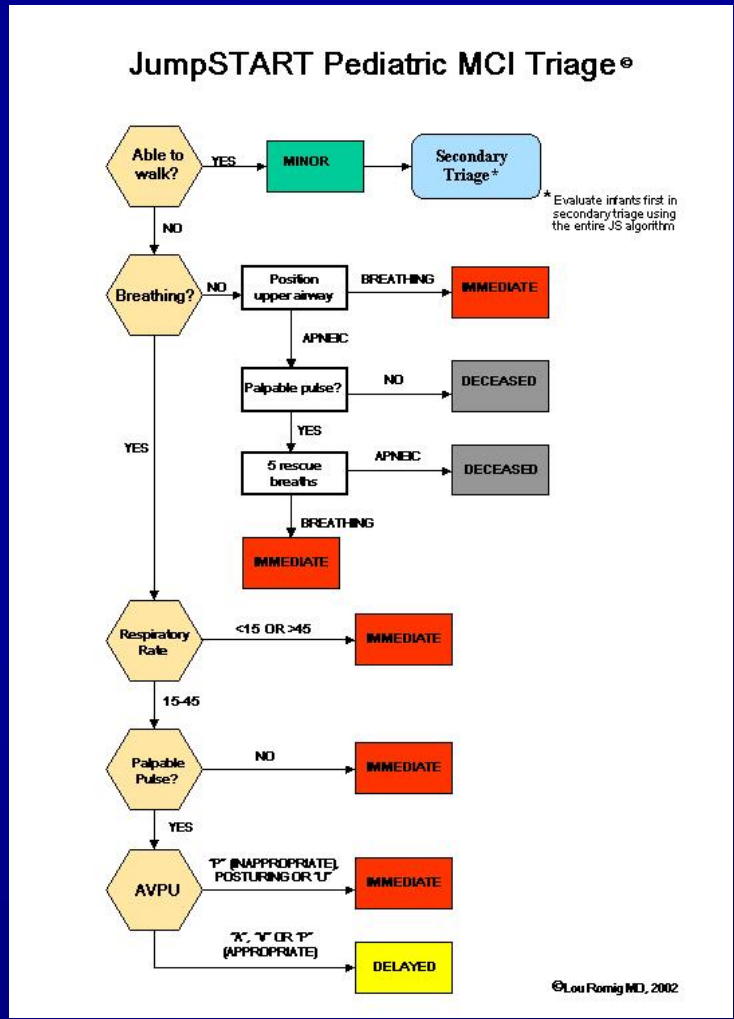
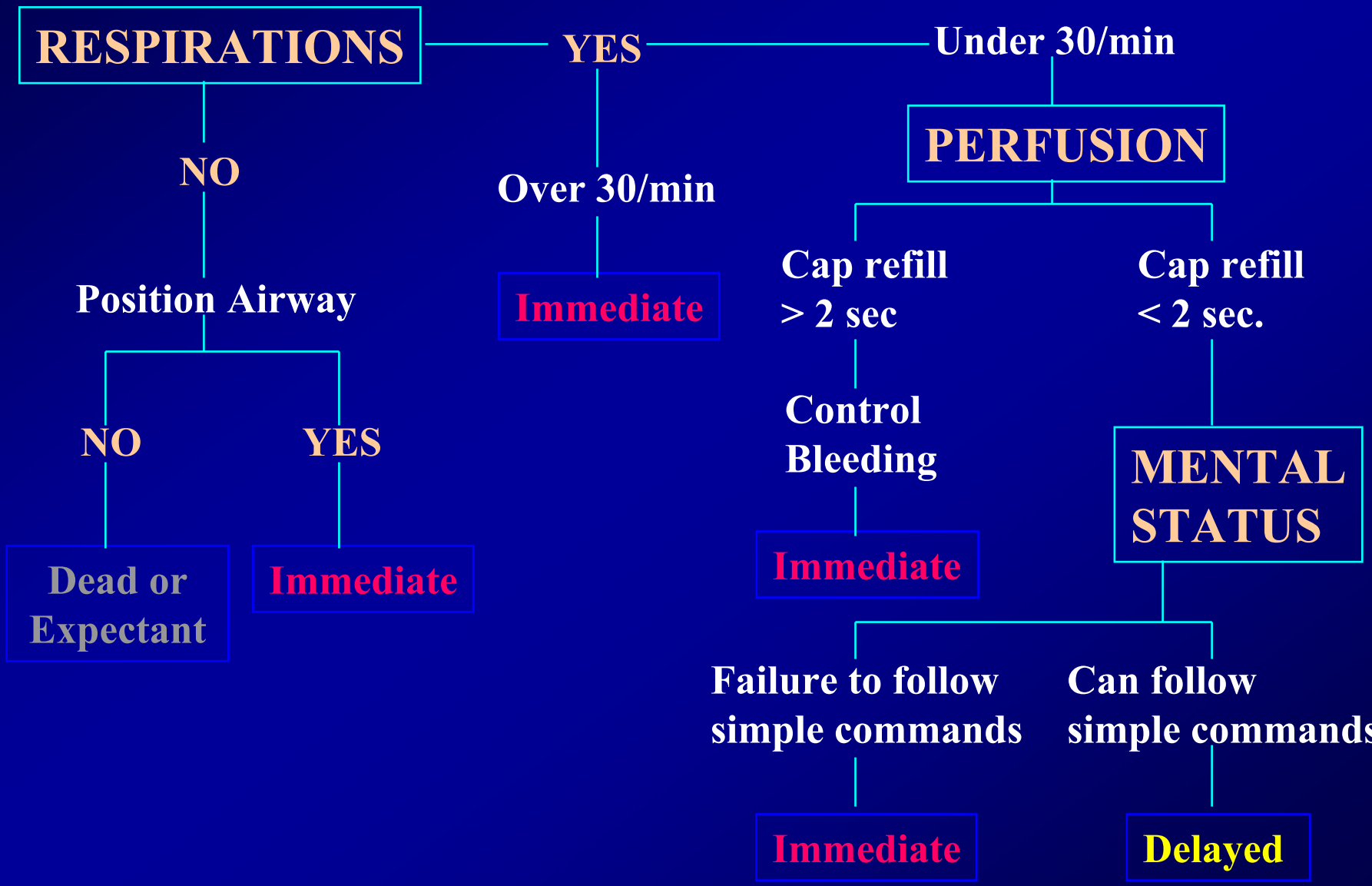


Used with permission, Lou E. Romig MD

START

- **S**imple **T**riage **A**nd **R**apid **T**reatment
- Developed jointly by Newport Beach (CA) Fire and Marine Dept. and Hoag Hospital
- Gold standard for field adult multiple casualty (MCI) triage in the US and numerous countries around the world
- Utilizes the standard four triage categories
- Used for primary triage
- *www.start-triage.com* – materials available for purchase

START Triage



START: Step 1

Triage officer announces that all patients that can walk should get up and walk to a designated area for eventual secondary triage.

All ambulatory patients are initially tagged as Green.

START: Step 2

- Triage officer assesses patients in the order in which they are encountered
- Assess for presence or absence of spontaneous respirations
- If breathing, move to Step 3
- If apneic, open airway
- If patient remains apneic, tag as Black
- If patient starts breathing, tag as Red

START: Step 3

- Assess respiratory rate
- If ≤30, proceed to Step 4
- If > 30, tag patient as Red

START: Step 4

- Assess capillary refill
- If ≤ 2 seconds, move to Step 5
- If > 2 seconds, tag as Red

START: Step 5

- Assess mental status
- If able to obey commands, tag as Yellow
- If unable to obey commands, tag as Red

Mnemonic

R	30
P	2
M	Can do

The physiology of adults and children are not the same.

Primary MCI triage is based on physiology…

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 .

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.

Why do we need a pediatric tool?

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

Photo used with permission of the Emergency Education Council of Maryland Region 5.

Why do we need a pediatric tool?

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

JumpSTART Pediatric MCI Triage

- Developed by Lou Romig MD, a pediatric emergency/EMS physician
- Now in widespread use throughout the US and Canada
- Being taught in numerous countries around the world
- Incorporated into national-level courses and EMS/disaster textbooks
- *www.jumpstarttriage.com* – all materials available for download at no charge

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.

BUT…

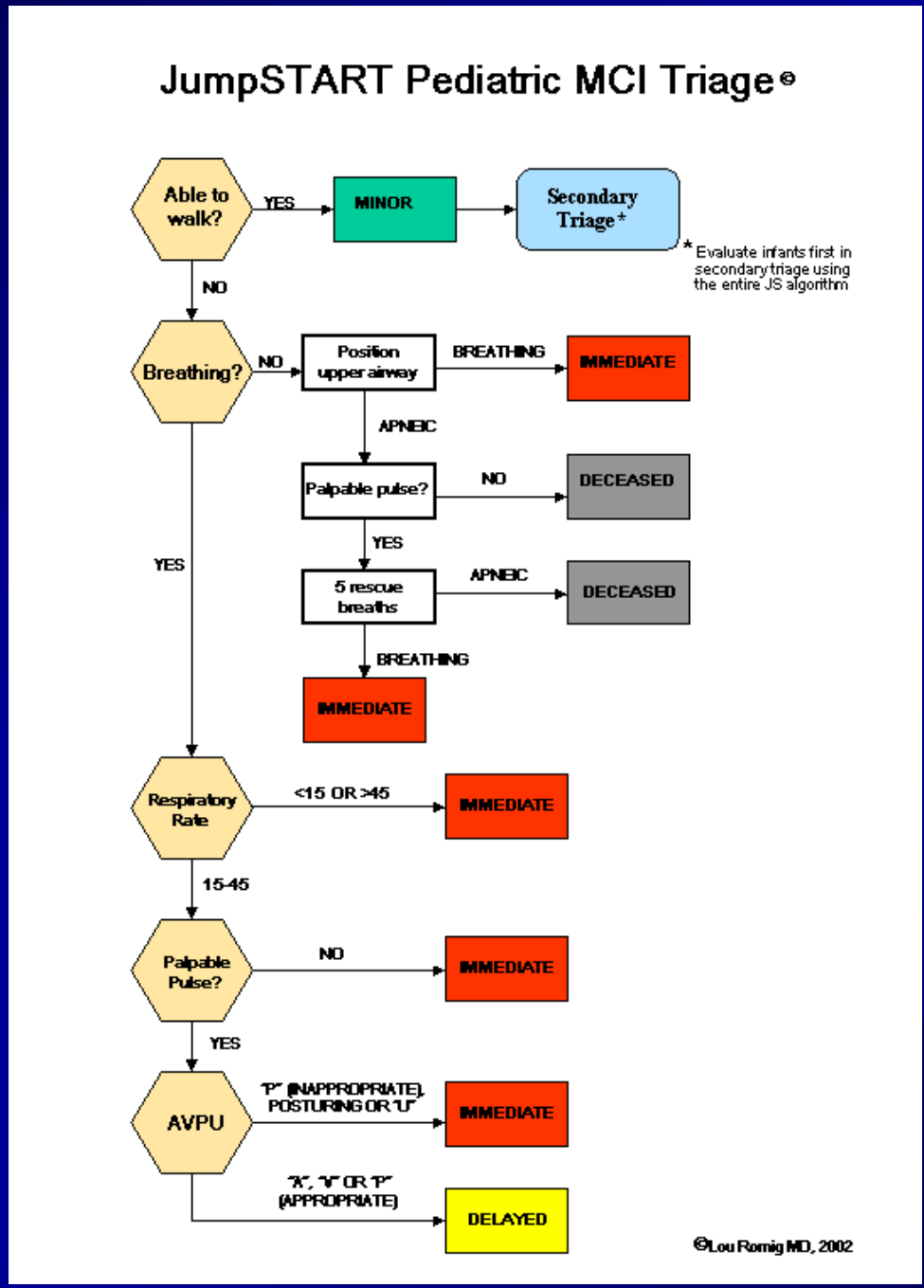

I’m 10!

JumpSTART: Age

The ages of "tweens and teens" can be hard to determine so the current recommendation is:

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

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



Used with permission, Lou E. Romig MD

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.

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!

Photo used with permission of the Emergency Education Council of Maryland Region 5.

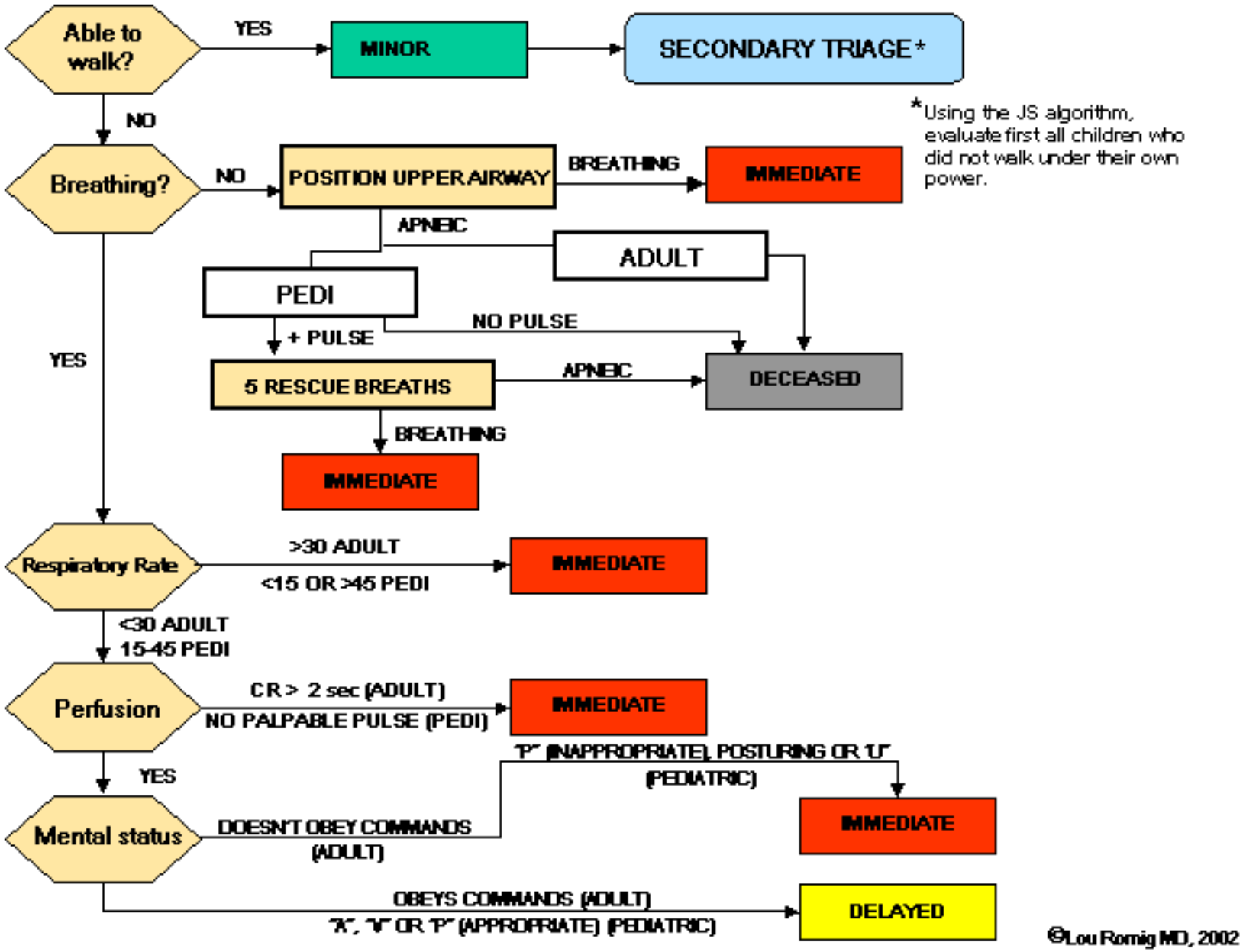
Patients' limitations in ambulation and communication and differentiation between acute and chronic neurological conditions are the main challenges in the triage of children with special needs and disabilities.

Photo Lou Romig MD

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.

Combined START/JumpSTART Triage Algorithm



Putting it into practice

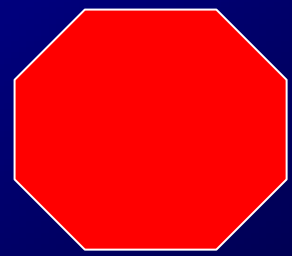
Photo used with permission of the Emergency Education Council of Maryland Region 5.

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.

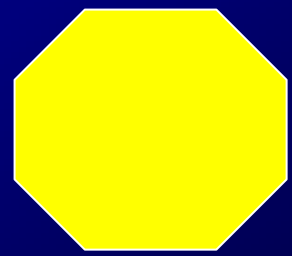
What's your call?

- 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



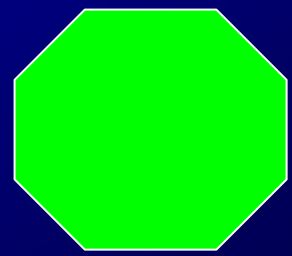
What's your call?

- 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



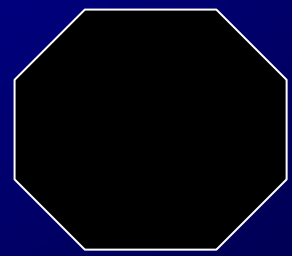
What's your call?

- 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



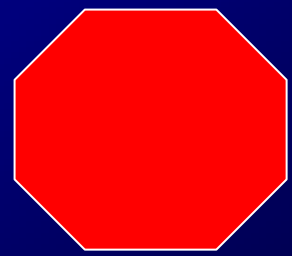
What's your call?

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



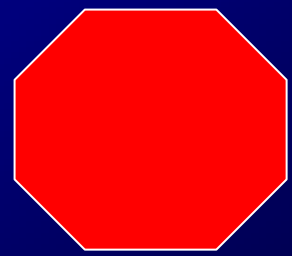
What's your call?

- 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



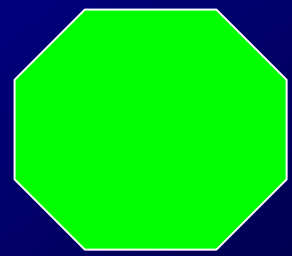
What's your call?

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



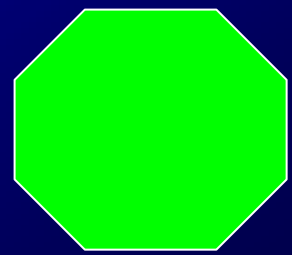
What's your call?

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



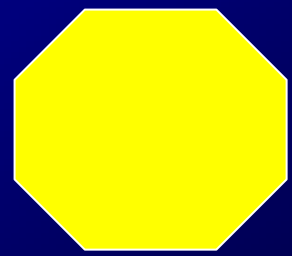
What's your call?

- 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.



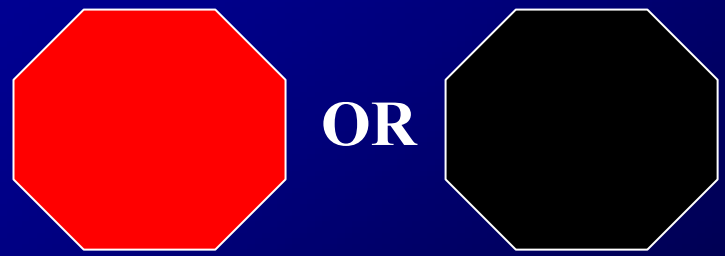
What's your call?

- 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.



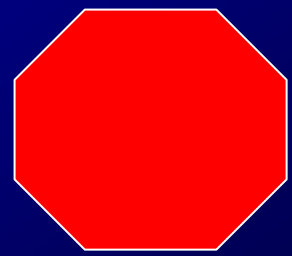
What's your call?

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



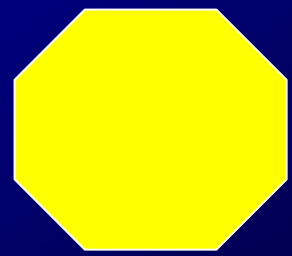
What's your call?

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



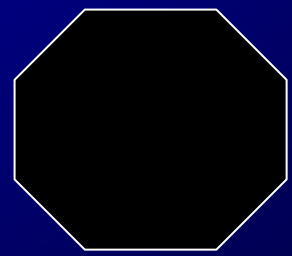
What's your call?

- 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.



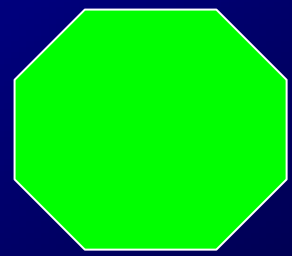
What's your call?

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



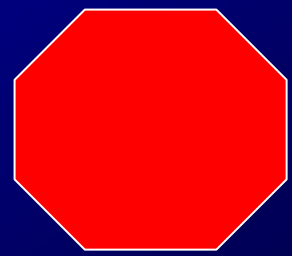
What's your call?

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



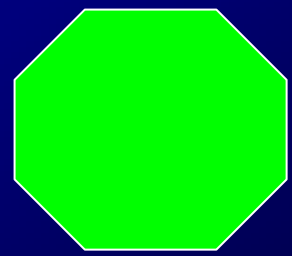
What's your call?

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



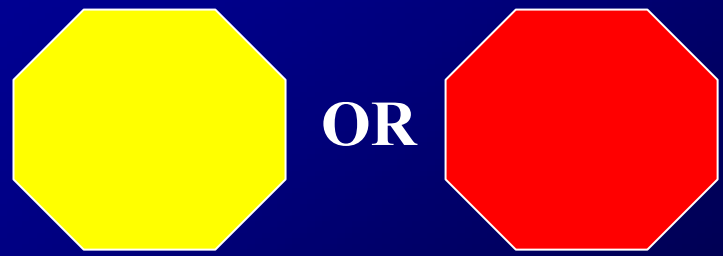
What's your call?

- 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



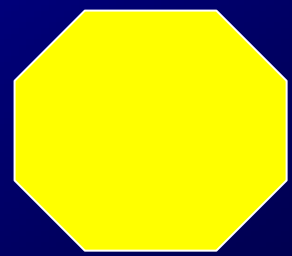
What's your call?

- 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.



Key Points

- The physiology of adults and children differ; therefore different primary triage systems should be used
- Use JumpSTART for infants through older children
- Use START for young adults and older
- Primary triage is just the first look at an MCI victim, similar to the primary/initial survey/assessment

Special Thanks!

To Dr. Romig for the permission to use this presentation

MWLCEMS System