

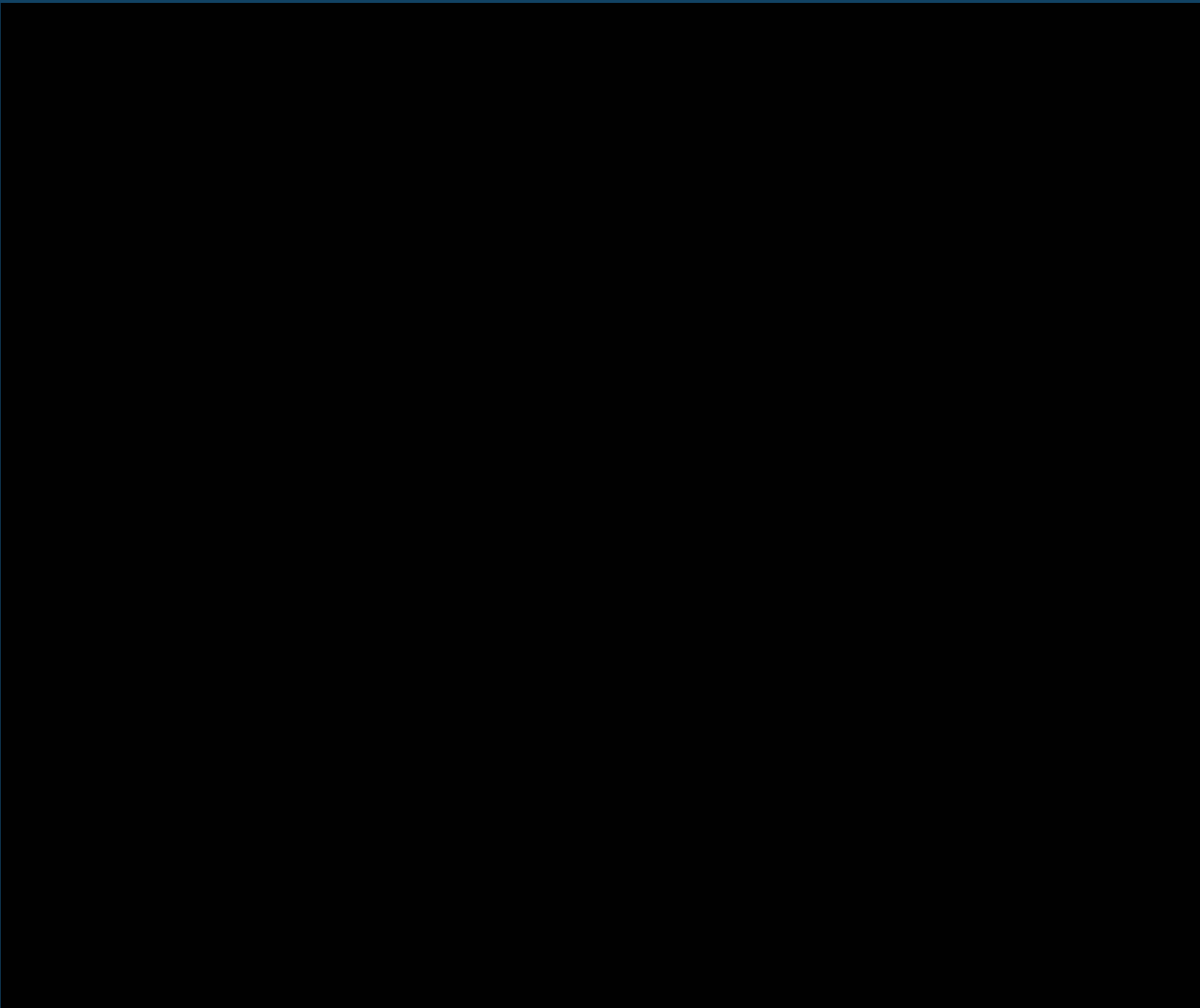


Pediatric Assessment Skills

30 Second Assessments

60 Second MCI Triage

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University of Washington
MultiCare Health System
WA-1DMAT, MAC-ST
Clinical Planner, NWHRN



Why do kids scare us????



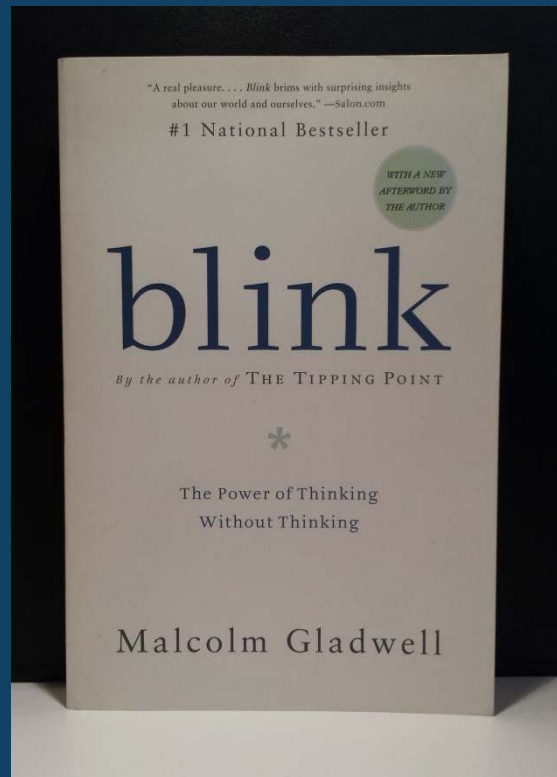
- Too small
- Too cute
- Physical
 - *Dosing*
 - *Procedures*
 - *Diagnoses*
- Psychological

FEAR

“We fear things in proportion to our ignorance”

Christian Nestell Bovee

Pediatric Assessment in 30 Seconds



Blink: The Power of Thinking Without Thinking
Malcolm Gladwell 2005, 2007

PAT

Pediatric Assessment Triangle

- Developed 2010
- Unvalidated but based on literature and expert opinion: AAP, ACEP, AHA, ENA, NAEMT,
- Adapted: PEPP, APLS, ENPC, PALS

PAT

- 30 seconds
- Hands off assessment
- “sick” vs “not sick”
- “critical” vs “not critical”
- Indicates the underlying physiologic abnormality
- Assessment: NOT diagnosis

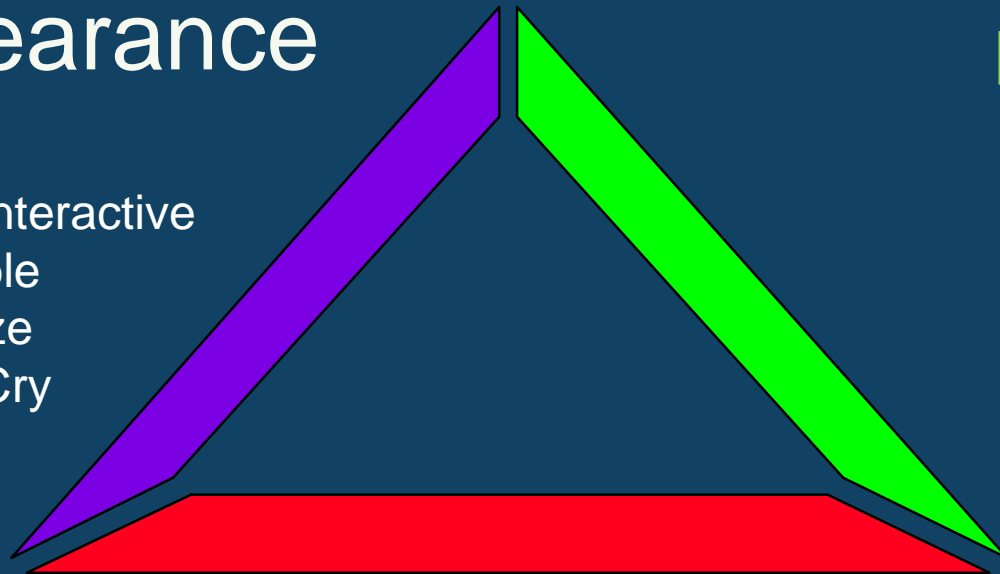
Pediatric Assessment Triangle

Appearance

Tone
Irritable/Interactive
Consolable
Look/Gaze
Speech/Cry

Breathing

Rate
Sounds
Position
Retractions/NF
Anxiety



Circulation

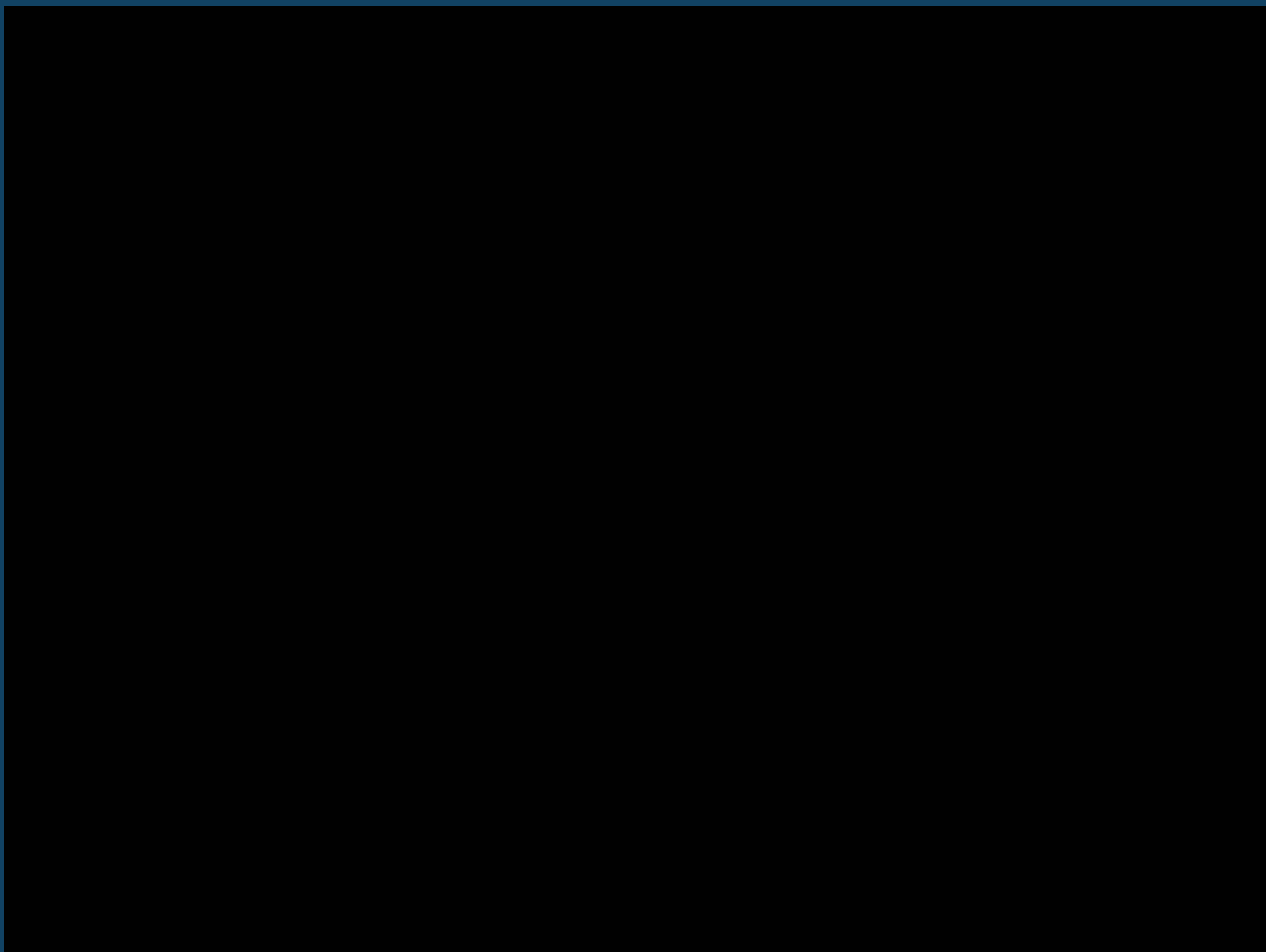
Color
Mottled
Cyanosis
Petechiae

PAT – Cases #1



PAT – Case #2



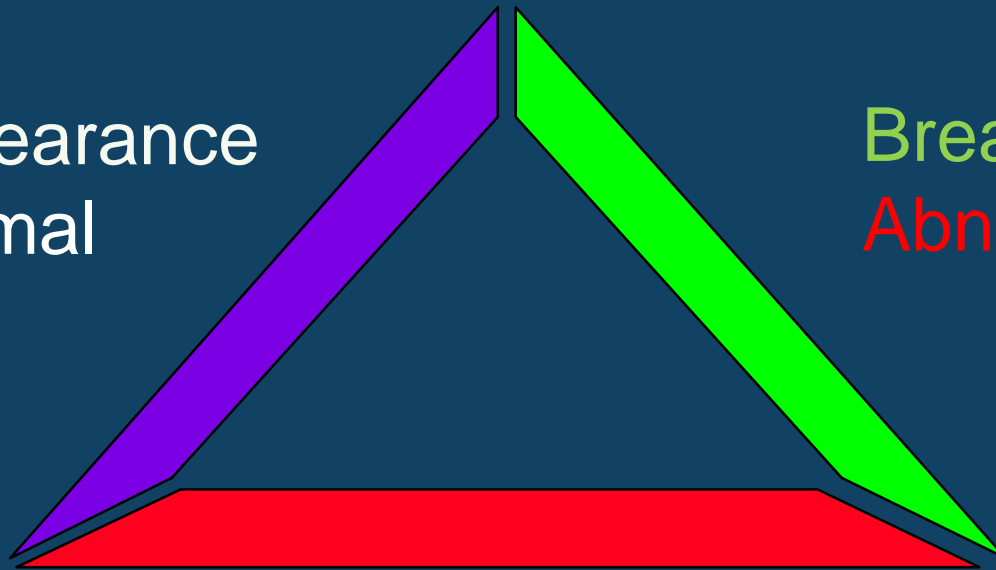


PAT

Physiology

Appearance
Normal

Breathing
Abnormal



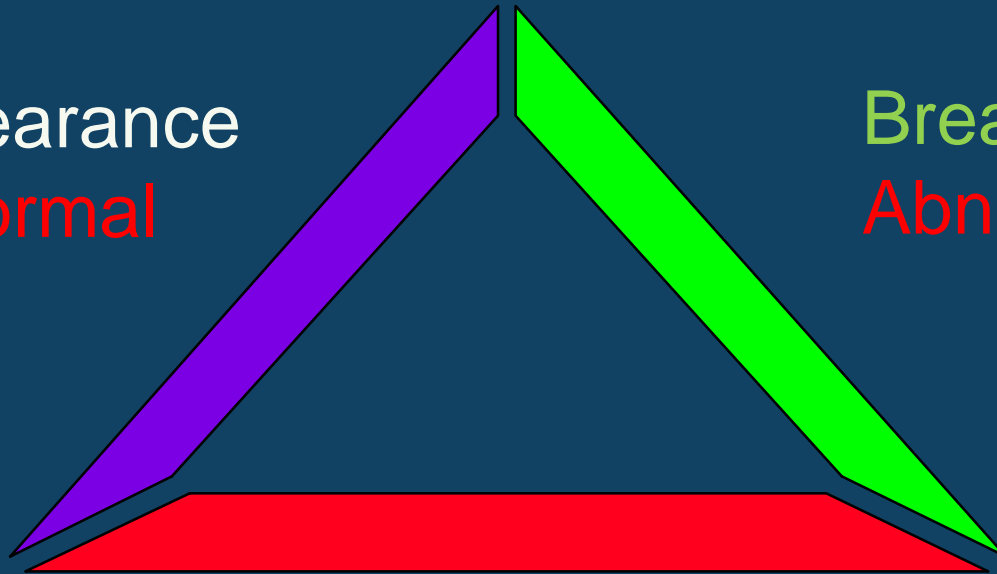
RESPIRATORY DISTRESS

PAT

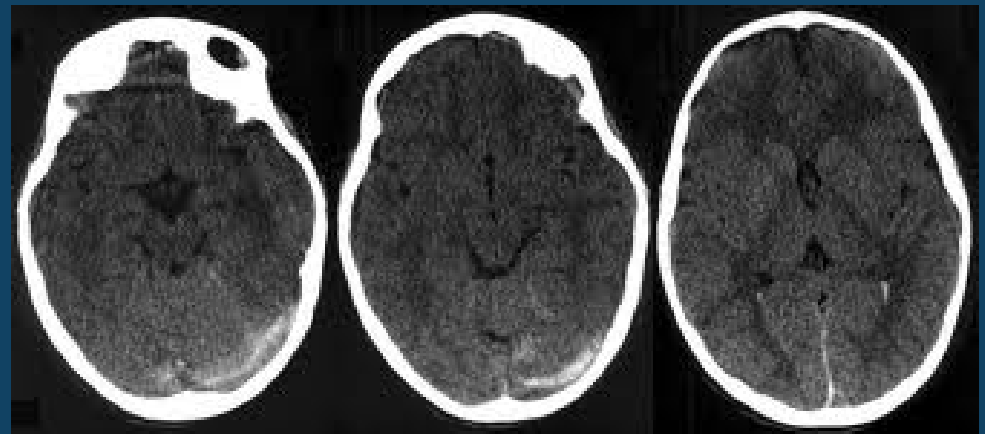
Physiology

Appearance
Abnormal

Breathing
Abnormal



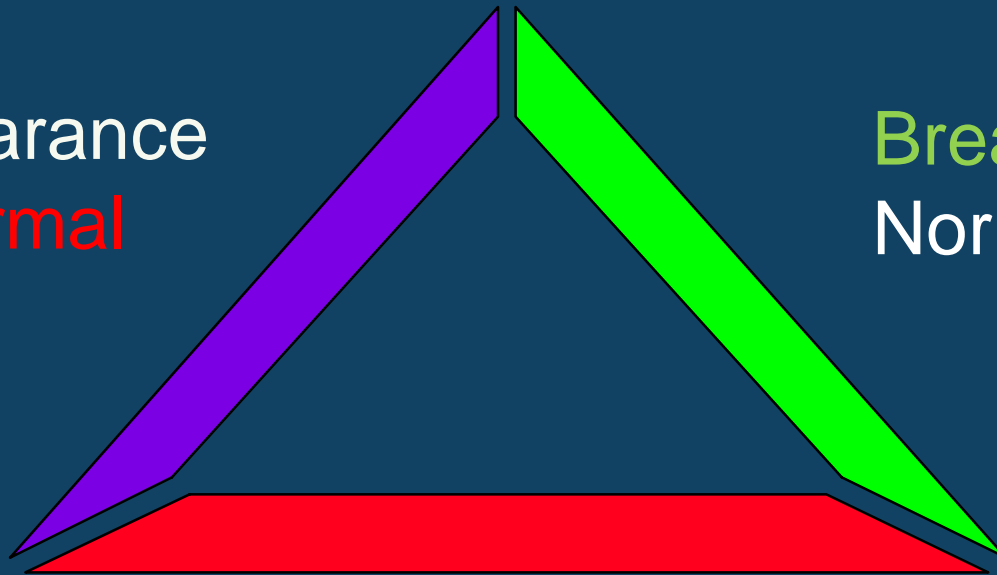
RESPIRATORY FAILURE



PAT Physiology

Appearance
Abnormal

Breathing
Normal



NORMAL
Circulation

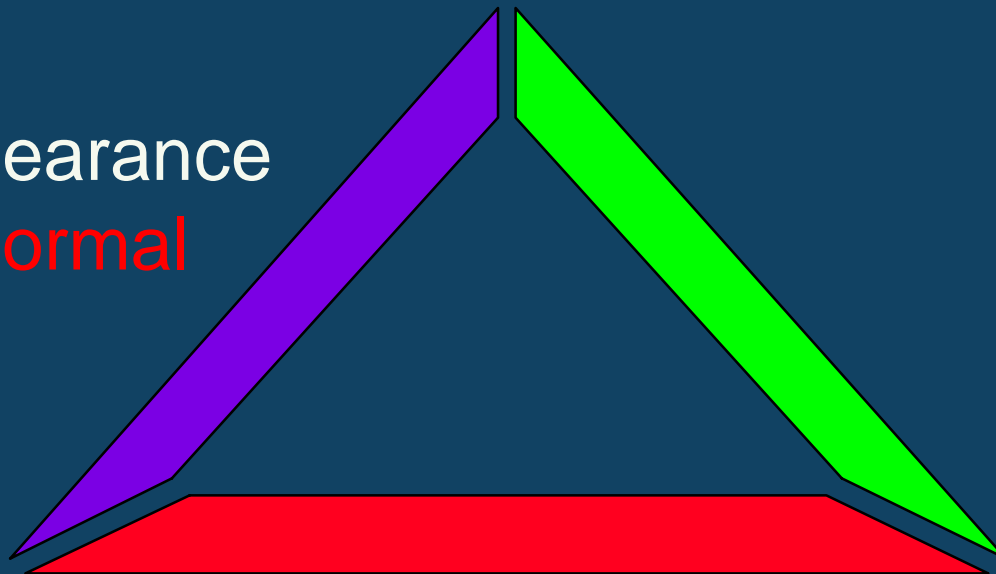
NEUROLOGIC DYSFUNCTION



PAT

Physiology

Appearance
Abnormal

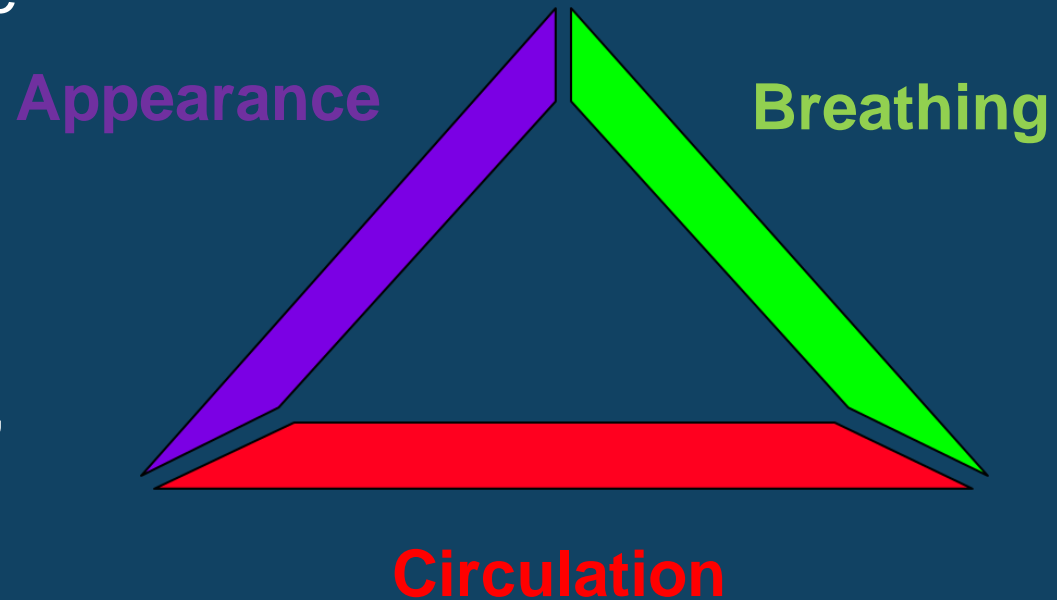


ABNORMAL
Circulation

SHOCK

PAT: PITS and POINTERS

- Train yourself to be careful observers
- Add useful and accurate data to your “first impressions” memory bank.
- Butcher knife vs laser
- Kids change: reassess, reassess, reassess



Part 2

MCT: Mass Casualty Triage

Medical Disaster vs MCI

Point 1:

A medical disaster is NOT always an MCI

A true MCI shifts your working paradigm from doing the greatest good for every patient to doing the greatest good for the greatest number of potential survivors given the resources at hand.

MCI vs Medical Disaster (Surge)

- **Example:**
 - **Scenario 1:** It's Saturday evening in your ED, all ED rooms are full and 2 non-critical ambulances are on the way. There are 10 level 4 and 5 patients in the waiting room,
 - **Scenario 2:** It's Saturday evening in your ED, all ED rooms are full and 2 non-critical ambulances are on the way. There are 10 level 4 and 5 patients in the waiting room. Then there is a loud explosion during the Mountain View Elementary Spring Concert (>200 attendees). EMS is overwhelmed. Patients are walking/carrying/driving to your healthcare facility or clinic. There are 50 patients sitting in your parking lot.



What do you do?



MCI Triage Challenges

- No national standards
- 120 different types of triage labels and tools
- START, JumpSTART, Homebush Triage Standard, CareFlight Triage, Triage Sieve, Sacco Triage Method, CESIRA Protocol, MASS Triage, NATO Triage, PTT.
- *None have been shown conclusively to be better than any other.*
 - MCT systems difficult to study
 - Retrospective, non-mass casualty based, computer model

Point 2:

**MCI Triage algorithms are NOT perfect,
but they ARE important.**

MCI GOALS

- Identify critical patients quickly
- Provide appropriate life saving measures
- Sort patients into treatment categories (GREEN-BLACK)
- Speed and accuracy



START

Simple Triage and Rapid Treatment

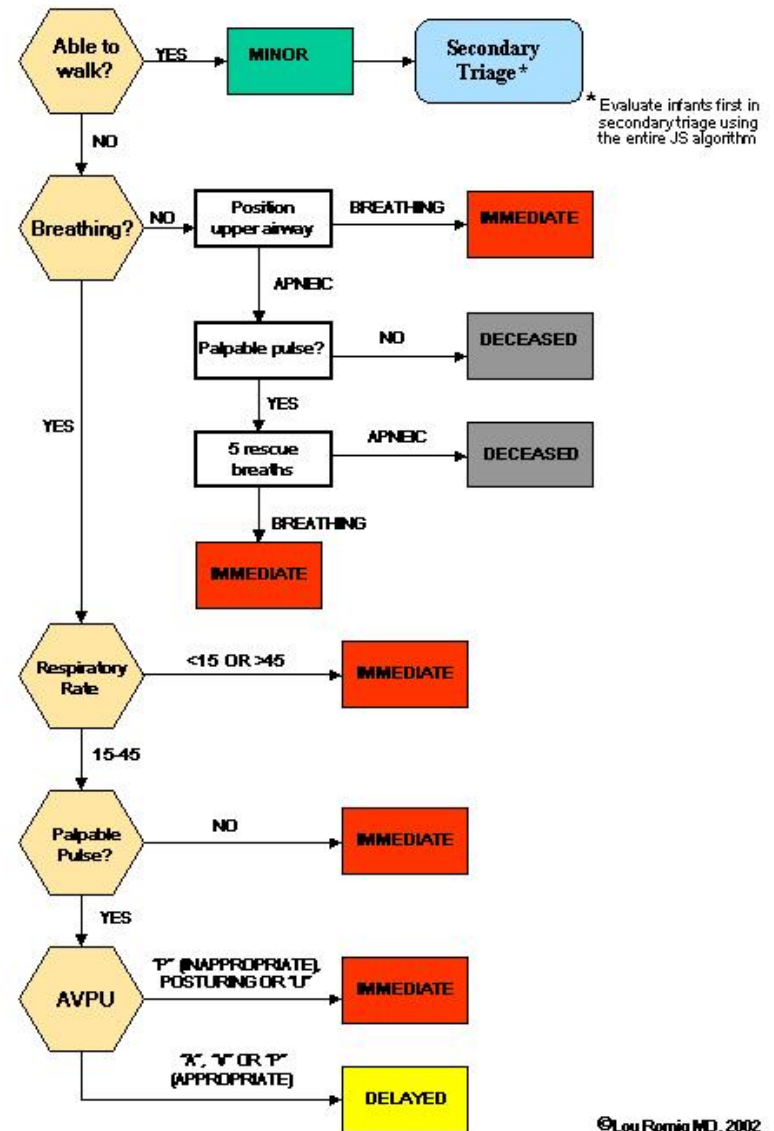
1983

- One of the most common mass casualty triage systems in the US. (default “national standard”)
- Based **RPM**: **R**esp Rapte, **P**erfusion, **M**ental Status 60 second triage, identify immediate medical needs and categorize patients
- Triage Interventions: Open airway, control hemorrhage
- Color identifications:
 - **Red**: immediate
 - **Yellow**: delayed
 - **Green**: minor
 - **Black**: deceased or expected

JumpSTART

- Pediatric MCI Triage Tool
- 1995 Dr. Romig Miami Children's Hospital
- Addresses importance of pediatric airway
- Allows 5 rescue breathes
- Different parameters for RR and MS (AVPU)

JumpSTART Pediatric MCI Triage®



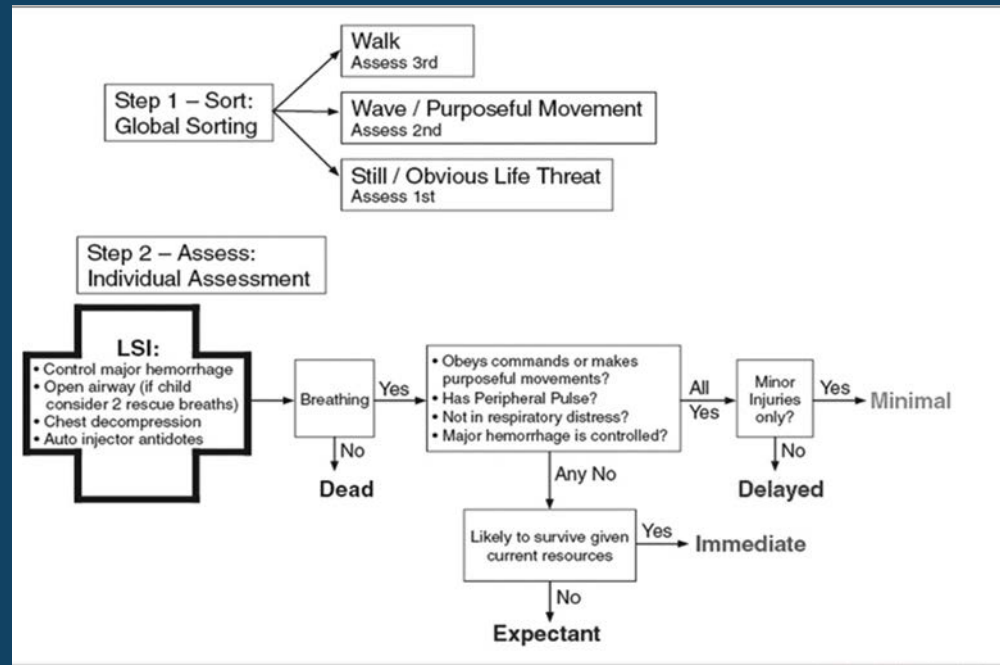
Problems

- Need a faster way to identify the sickest patients
- Need to be able to perform fast life saving interventions.
- Need a way to do this without separate Adult vs Peds protocols: what is a kid?
- Need a way to triage that does not require a lot of memorization (RR, HR, AVPU)
- Need an algorithm that is flexible and takes into account resources available.

SALT

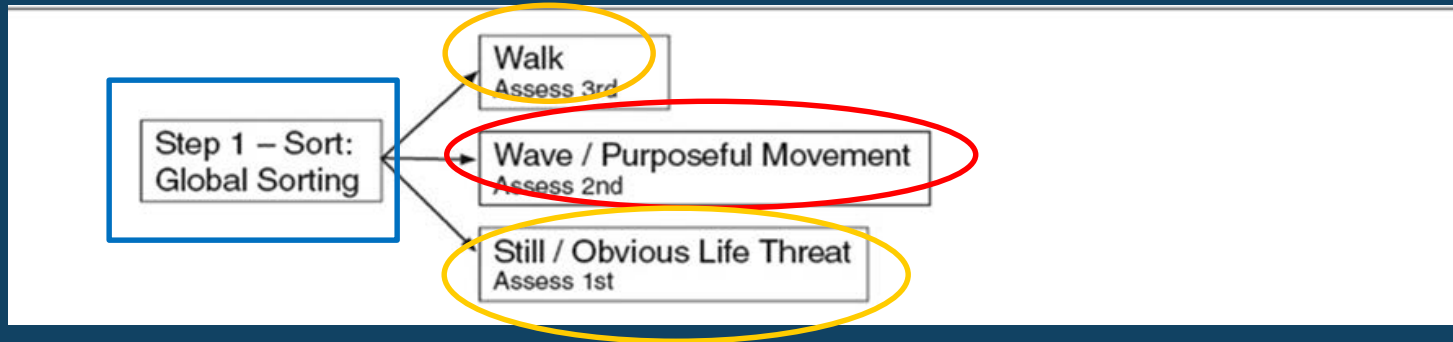
Sort, Assess, Lifesaving Measures, Treat/Transport CDC, 2007

- Government
- Committee
- Actually works!!



SALT

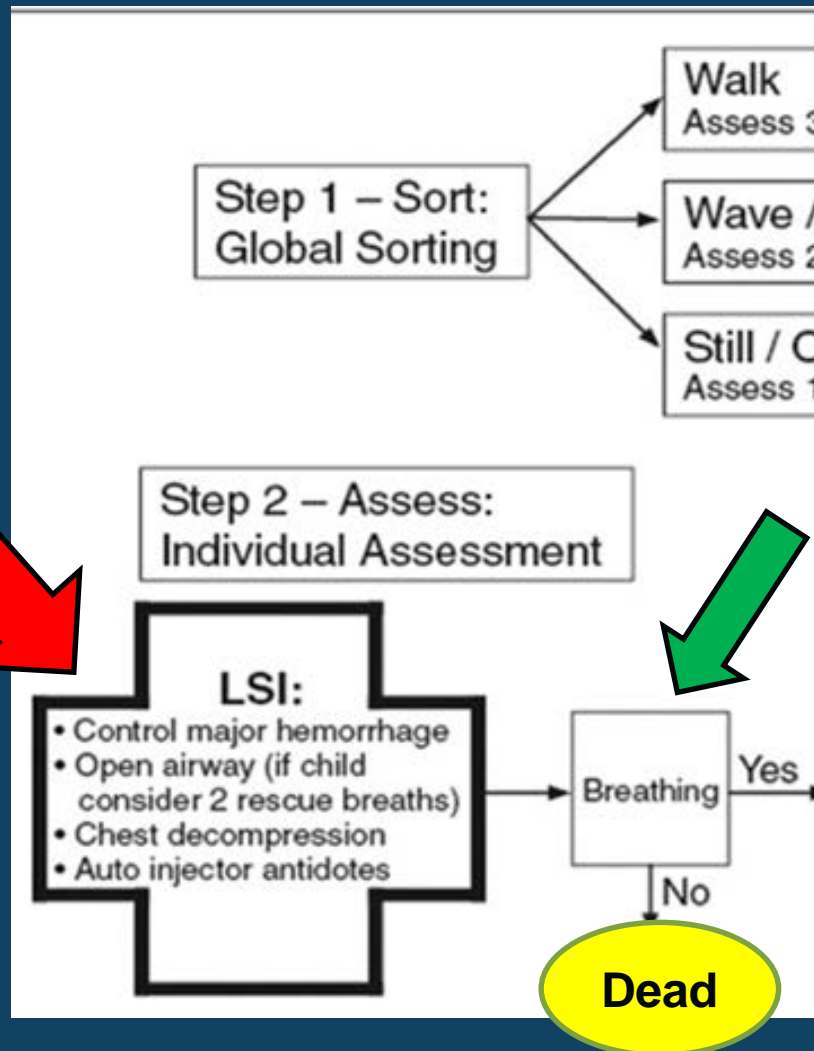
Sort, Assess, Lifesaving Measures, Treat/Transport



- **Problem:** Need faster way of identifying critical patients
 - **Answer:** Step 1: Global Sorting
 - **Walk** (wait for help to come)
 - **Wave** (assess second)
 - **Weep (Still): Assess First**

SALT

Mass Casualty Triage



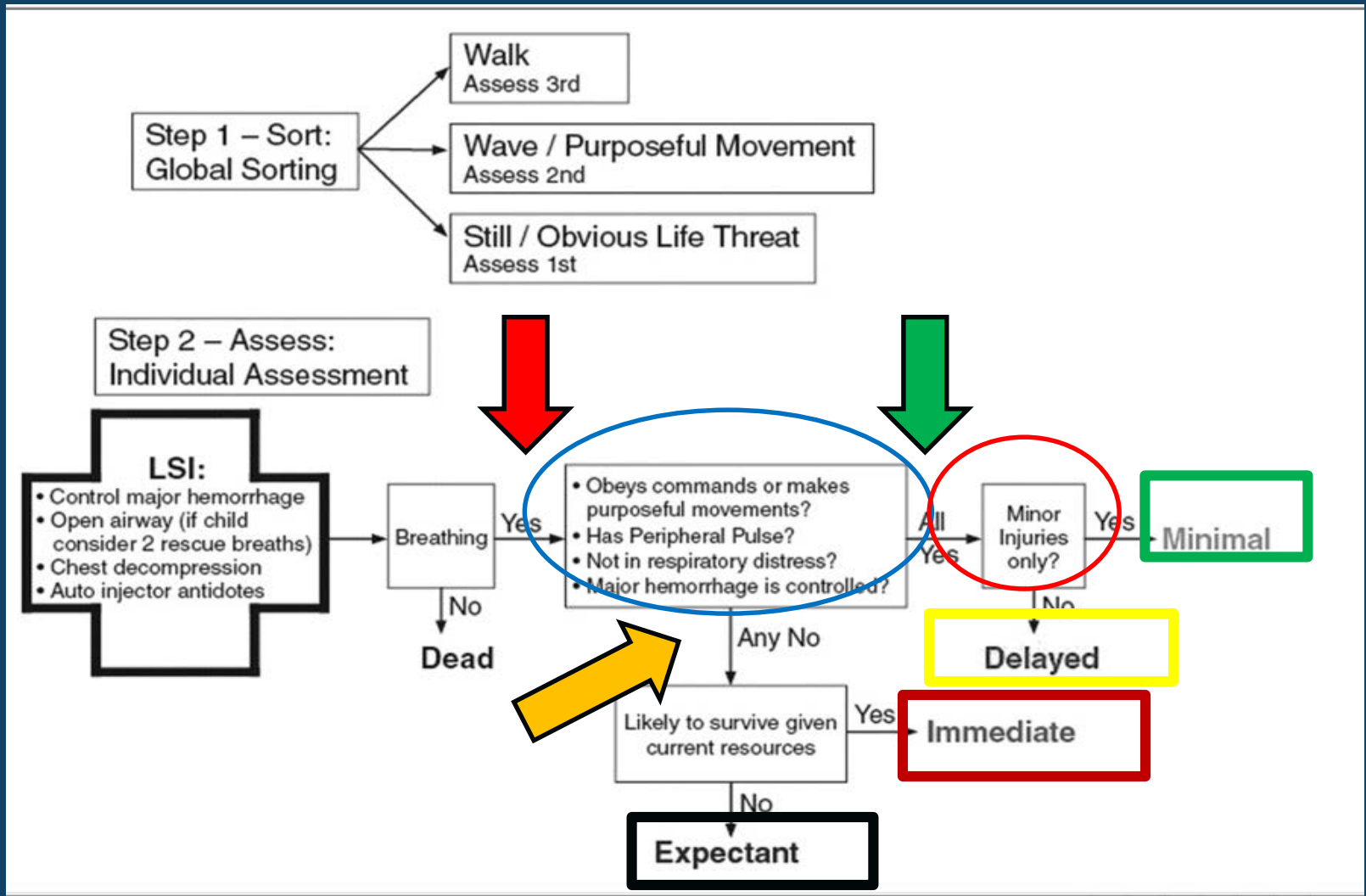
- **Problem:** Need to provide Life Saving Interventions

– Answer: LSI

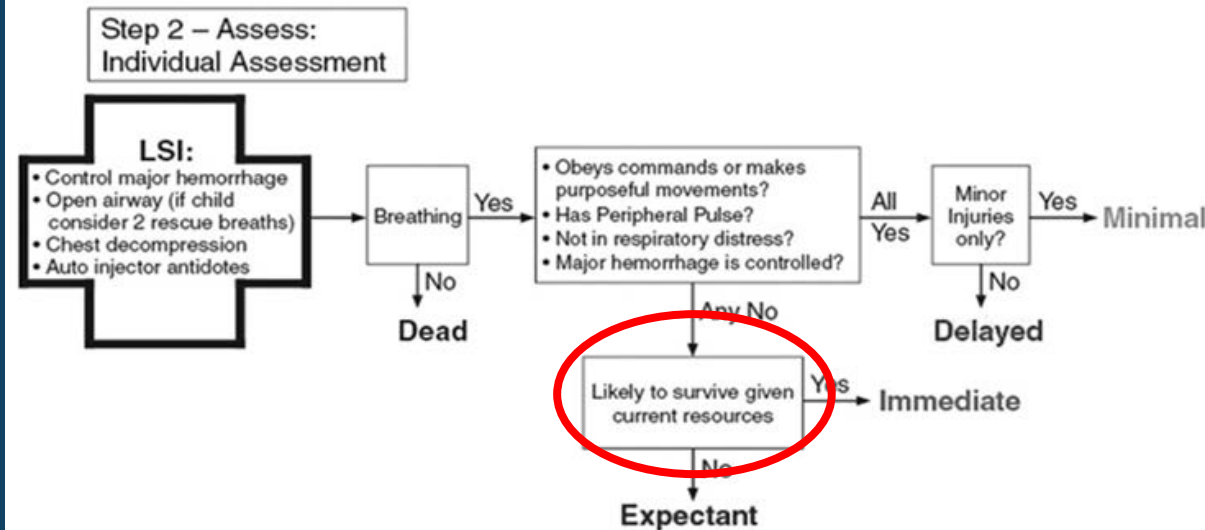
- Control major hemorrhage
- Open airway, give breaths to child
- Chest decompression
- Auto injector antidotes

SALT

Sort, Assess, Lifesaving Measures, Treat/Transport



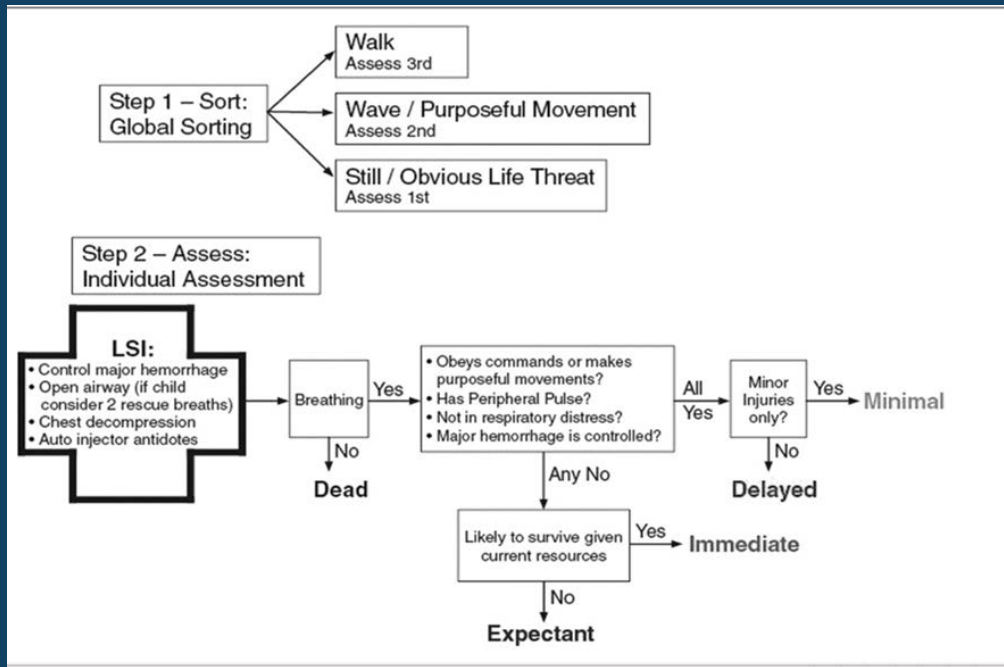
SALT Mass Casualty Triage



- Problem: Need an algorithm that is flexible and takes into account resources available
- Answer: “Likely to survive given current resources.”
- Why is this important?

SALT

Mass Casualty Triage



- Problem: Separate adult vs peds protocols
- Answer: Single protocol for both
- Problem: Too many numbers
- Answer: No numbers

Case Examples

Point 3:

MCI Triage algorithms are **NOT** perfect,
but they **ARE** important.

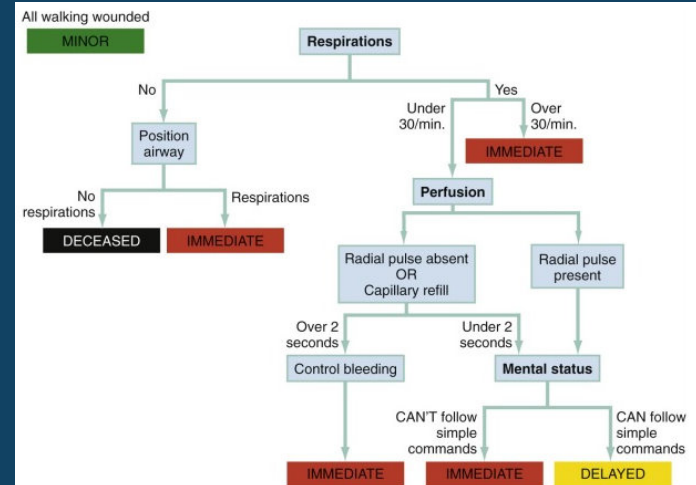
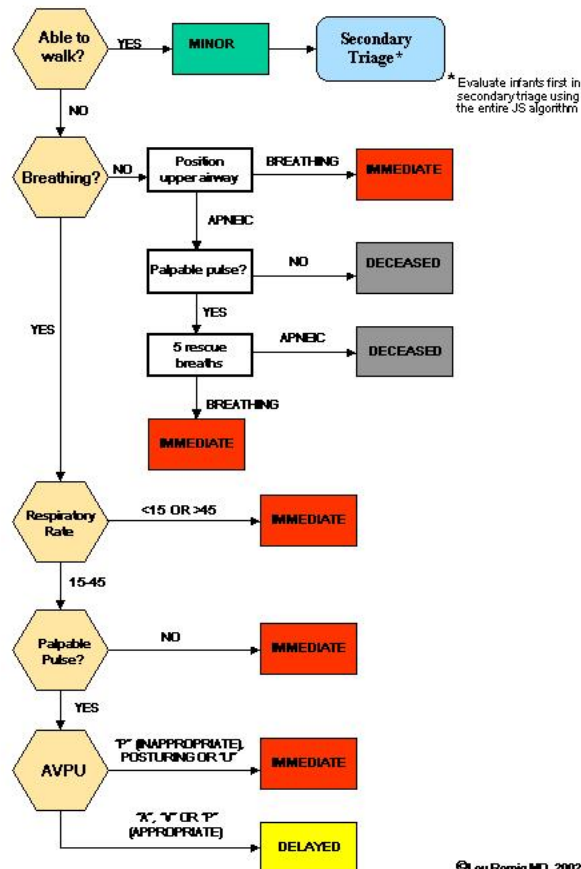
MCI Triage – Example 1

- 5 yo ambulatory, crying, with obvious deformity of her right arm. Bone visible. NV intact. Mental status is normal and no other obvious injuries
- 30 yo right swollen ankle. Cannot ambulate, following commands while yelling expletives, NV intact. no other obvious injuries.



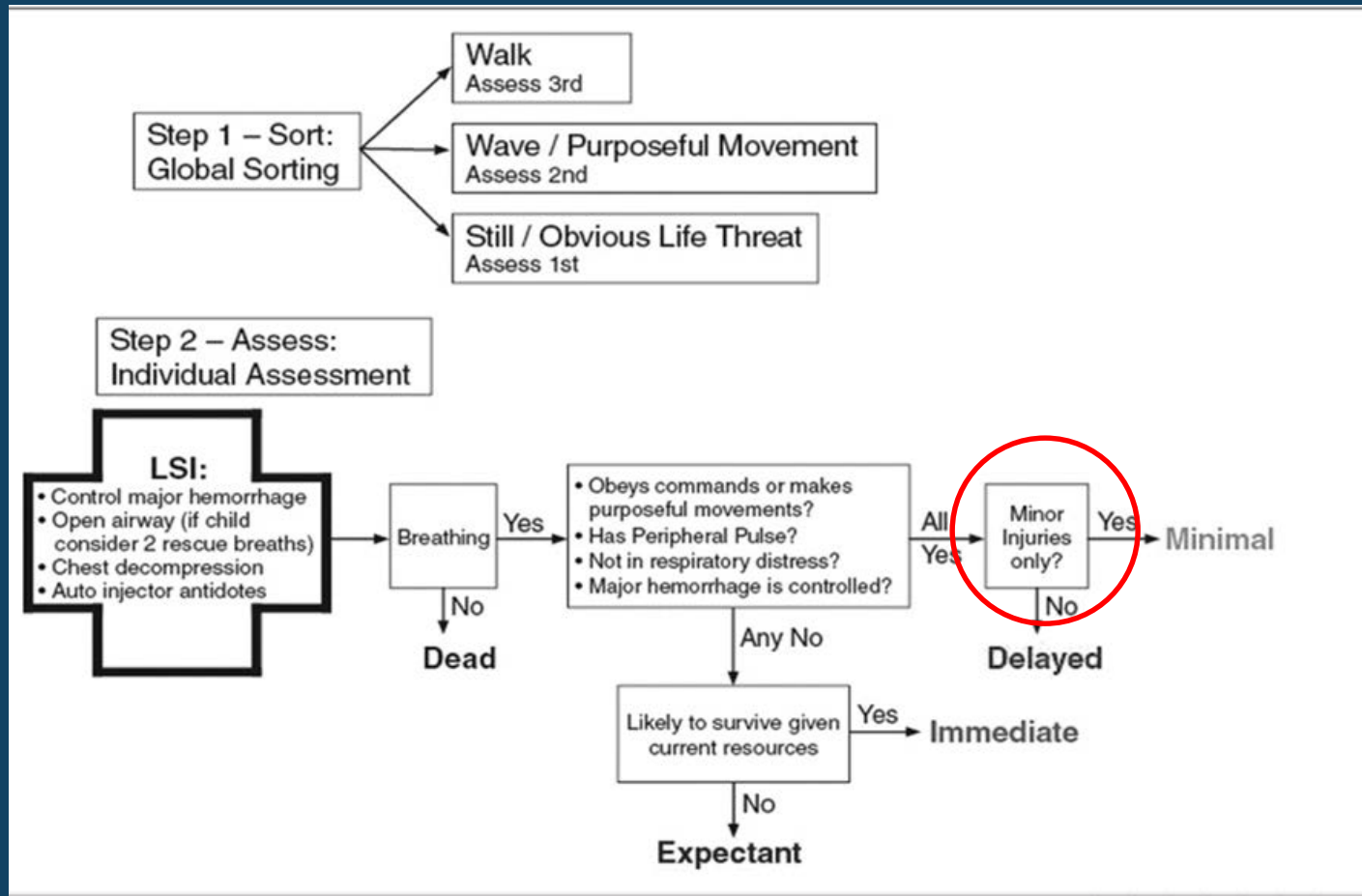
JumpSTART and START

JumpSTART Pediatric MCI Triage®



SALT

Sort, Assess, Lifesaving Measures, Treat/Transport



MCI Triage – Example 1

Orthopedic Injuries

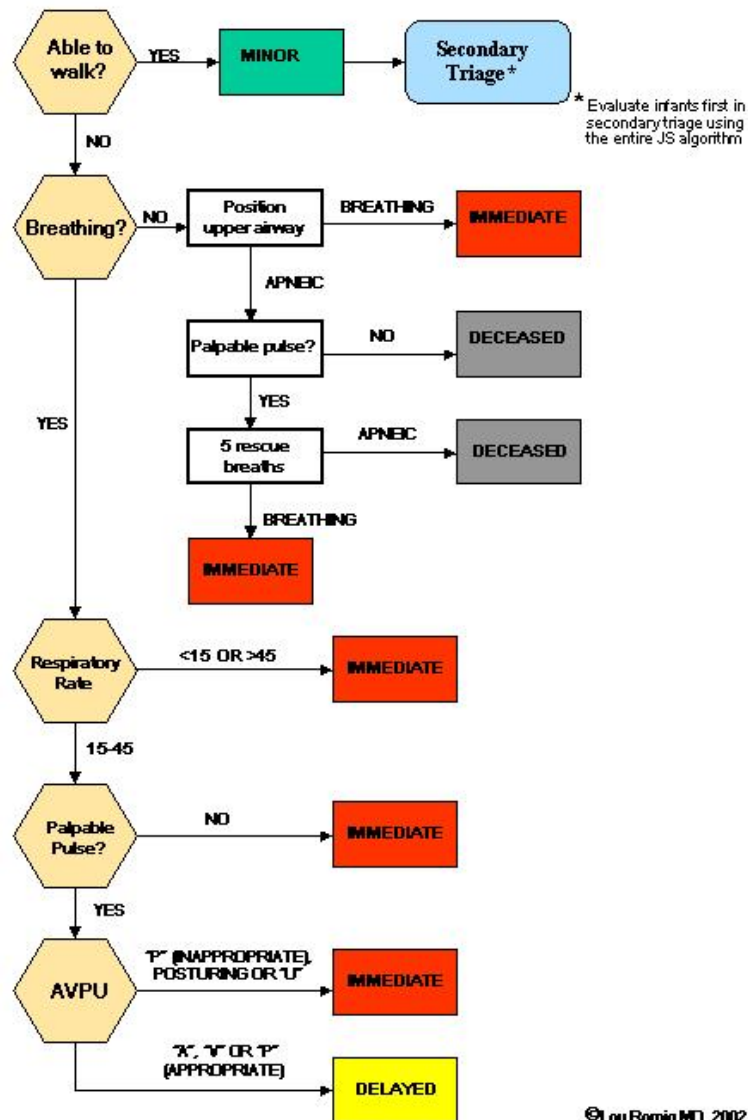
- Lessons:
 - START or JumpSTART
 - *Ambulatory* orthopedic injuries will all be triaged “green”. (even open fractures)
 - *Non-ambulatory* orthopedic injuries (i.e. ankle sprains) triaged “yellow”.
 - SALT: *leaves room for defining “minor” injury with the option of upgrading to “yellow – delayed”.*
 - ***Neither SALT nor JumpSTART accounts for degree of pain***

MCI Triage – Example 2

- 2 month old unresponsive, HR 180, RR 32 shallow, barely palpable radial pulse, petechia and purpura noted.

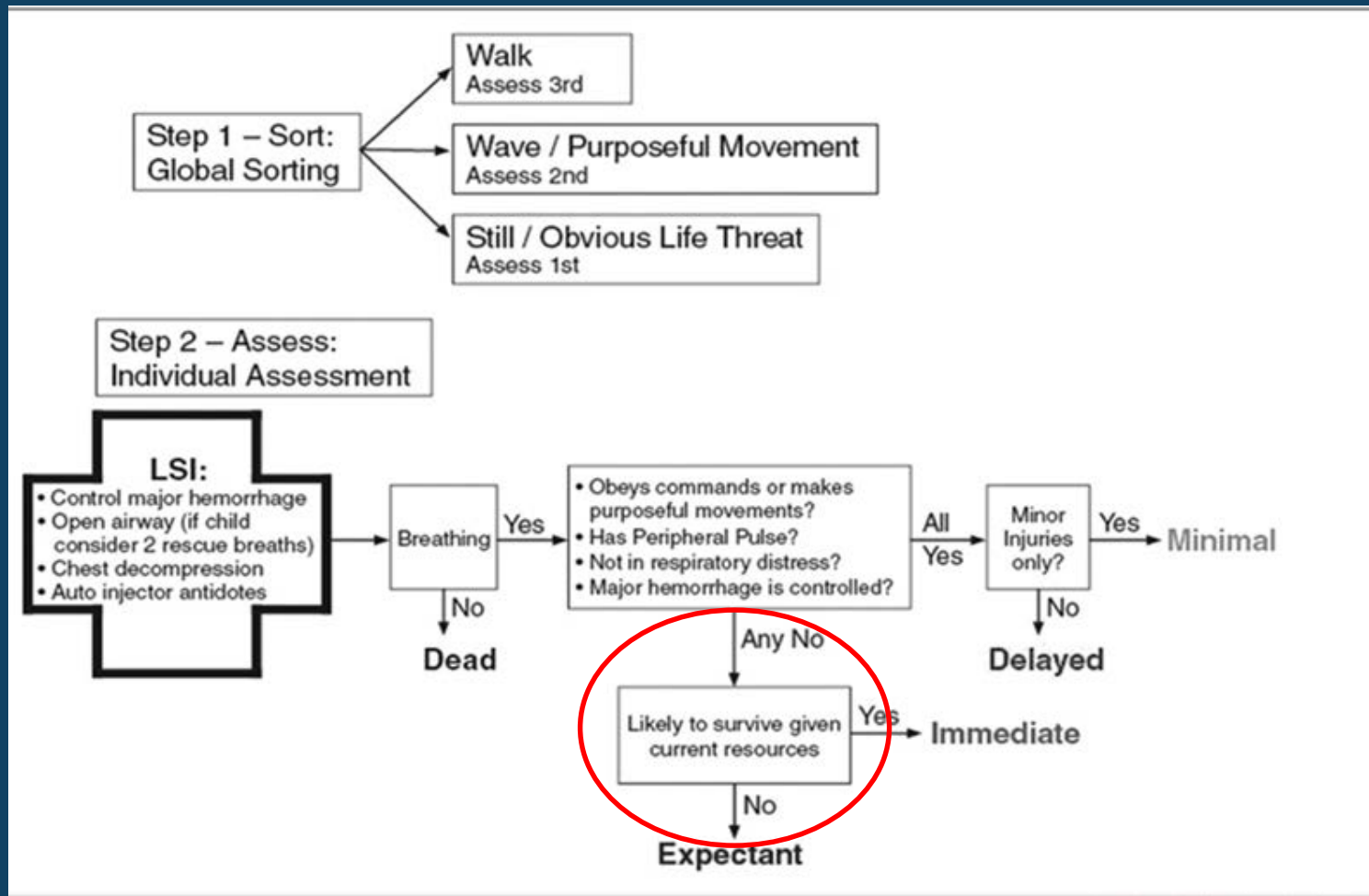


JumpSTART Pediatric MCI Triage[®]



SALT

Sort, Assess, Lifesaving Measures, Treat/Transport



MCI Triage – Example 2

Sepsis

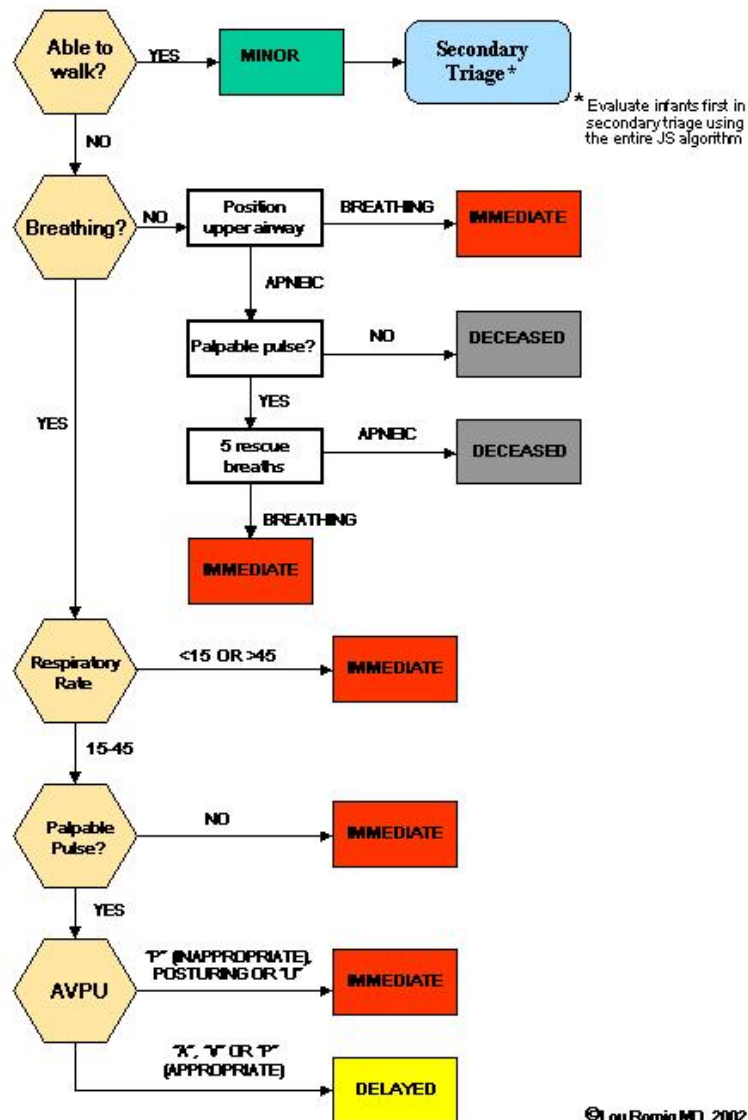
- Lessons:
 - Jumpstart and SALT: *very ill infants can be carried into “green” triage.*
 - SALT: allows available resources to be taken into consideration. *“Expectant” patients can be a fluid category and need re-triage as resources change or as their clinical situation changes.*

MCI Triage – Example 3

- 3 yo pale, diaphoretic, agitated. Non-ambulatory. Significant respiratory distress, tracheal deviation, no breath sounds on the right, thready pulse. HR 150, RR 40, shallow.

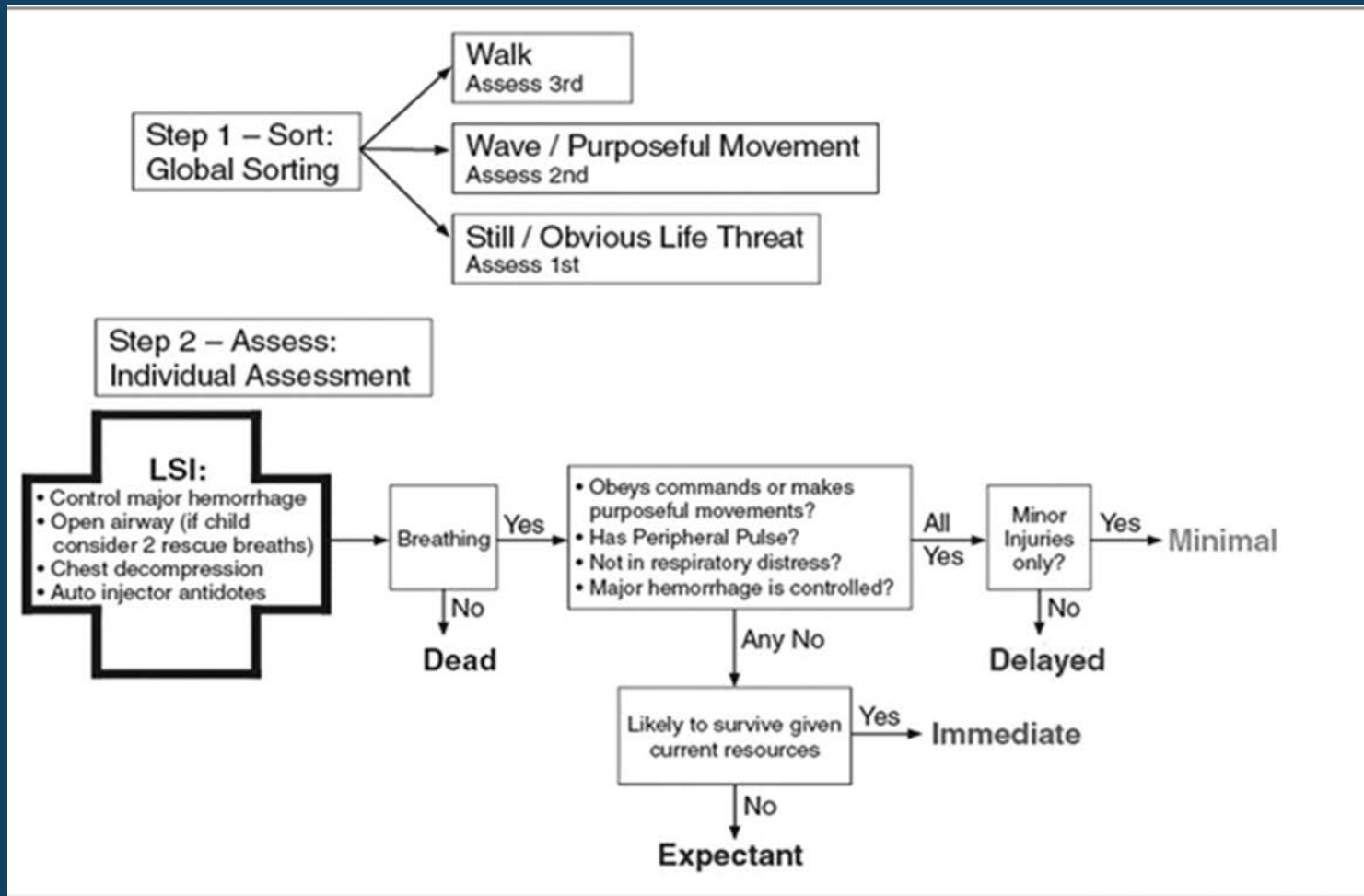


JumpSTART Pediatric MCI Triage[®]



SALT

Sort, Assess, Lifesaving Measures, Treat/Transport



MCI Triage – Example 3

Pneumothorax

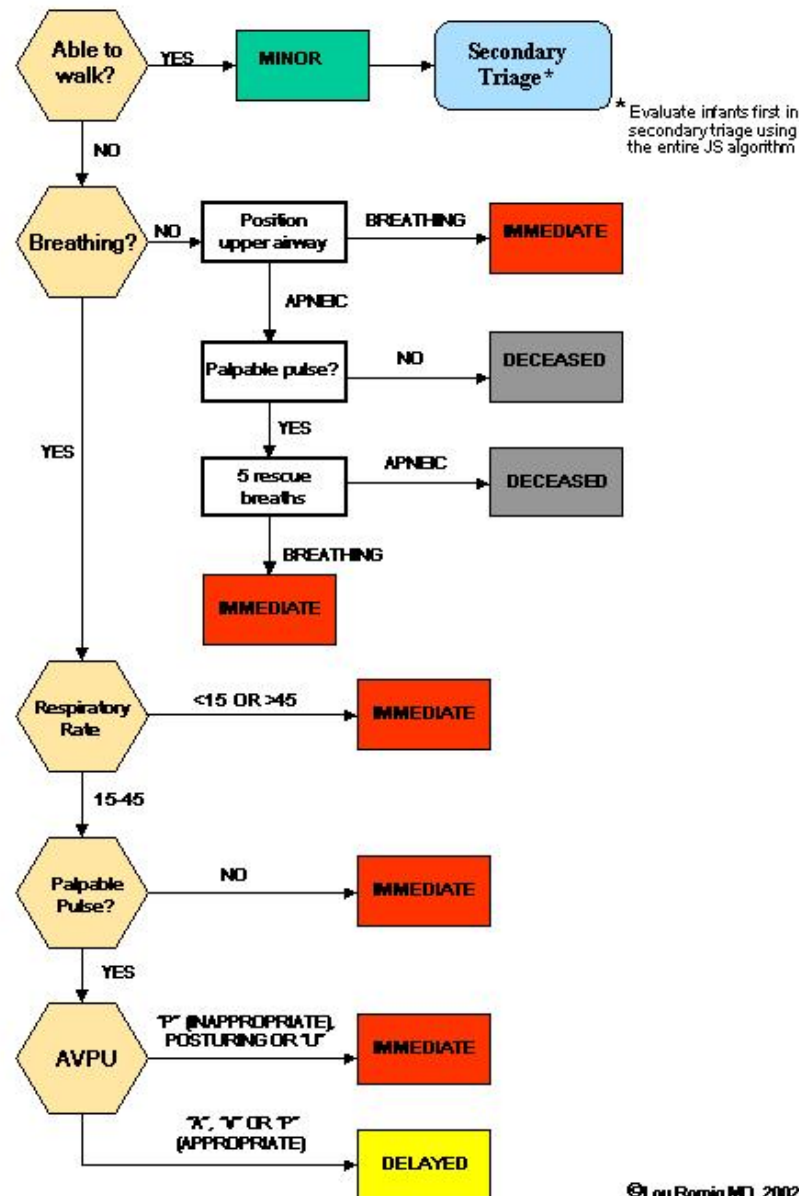
- **JumpSTART:** minimal interventions, Potentially triaged to “**Yellow**” with quick demise.
- **SALT:** quick sorting. Lifesaving Intervention includes chest decompression
- ***Lesson: SALT allows for quick sorting and LSI. If LSI is needed then patient no longer considered “minor”***

MCI Triage – Example 4

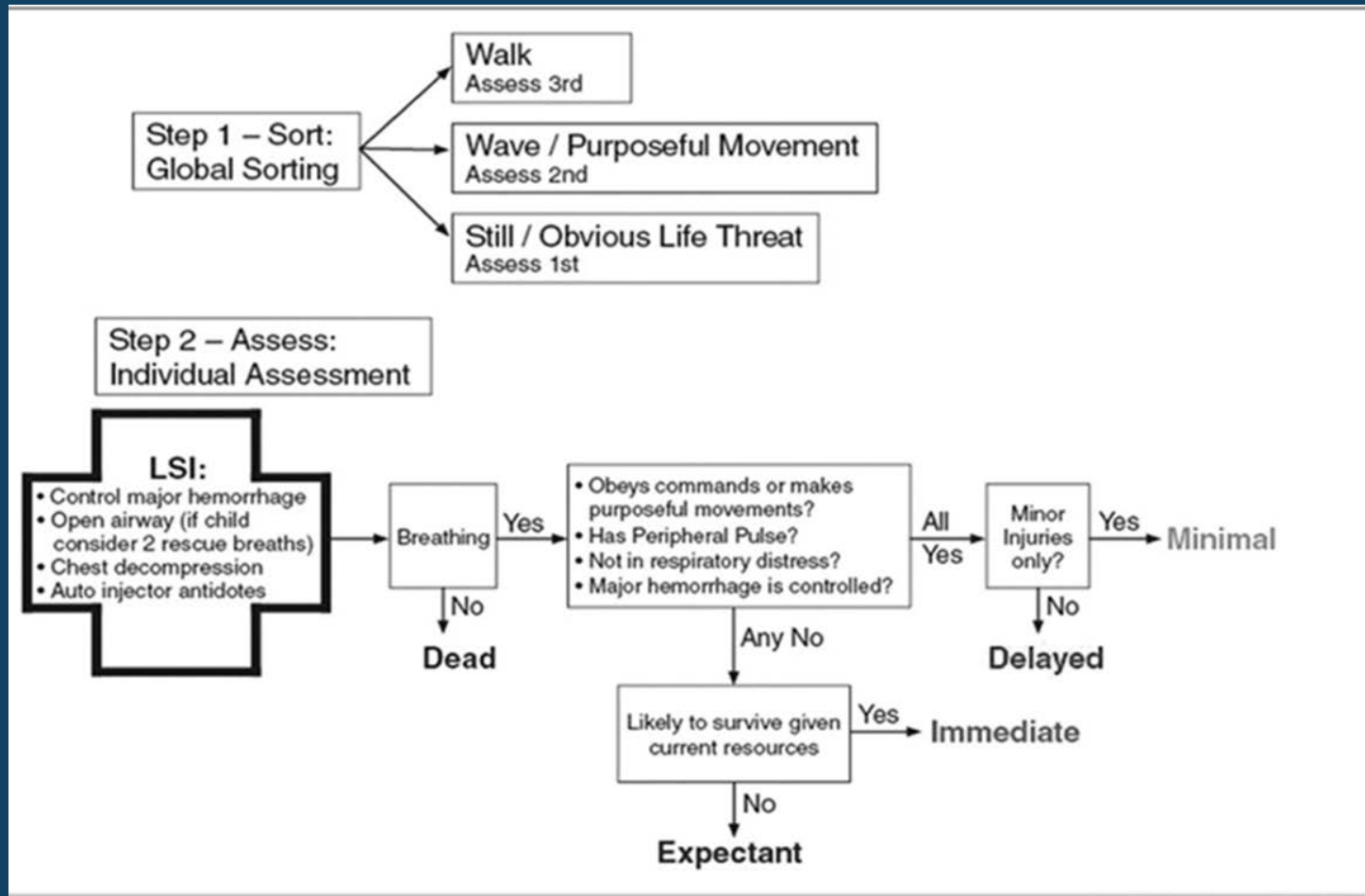
- 4 yo female with abdominal pain. Contusion in LUQ and epigastric area. Conversant, slightly tachycardic, but otherwise normal VS, ambulatory, normal mental status.



JumpSTART Pediatric MCI Triage®



Sort, Assess, Lifesaving measures, Treat/Transport (SALT)



MCI Triage – Example 4

Splenic laceration

- This child by both JumpSTART and SALT would be triaged “green” and in the last wave of secondary assessment.
- Serious pediatric injuries can be easily mis-triaged with MCI protocols.
- Children can maintain normal vitals signs with moderate blood loss, but if hemorrhage continues, they can quickly deteriorate.
- ***Lesson: Injured kids need constant re-assessment.***

SALT

- One algorithm
- Additional sorting capability
- No numbers to memorize
- Yes-No pathway
- Takes into account current resources
- Allows flexibility regarding “minor” injury given situation at hand

MCI Triage Summary

- Take home points:
 - Know the difference between a medical surge vs a true MCI
 - Learn one of the MCI Triage protocols and *practice using them*. (Consider SALT).
 - All MCI Triage protocols are imperfect. Experience and clinical judgment are essential
 - Don't forget re-assessments especially with Peds patients

Thank You
Questions?

Resources

- **Paramedic accuracy using SALT triage after a brief initial training.** [Deluhery MR](#), [Lerner EB](#), [Pirrallo RG](#), [Schwartz RB](#). [Prehosp Emerg Care](#). 2011 Oct-Dec;15(4):526-32. Epub 2011 May 18. Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee, Wisconsin 53226, USA.
- **Science and evidence-based considerations for fulfilling the SALT triage framework.** [Navin DM](#), [Sacco WJ](#); [Disaster Med Public Health Prep](#). 2010 Mar;4(1):10-2
- **Use of SALT triage in a simulated mass-casualty incident.** [Lerner EB](#), [Schwartz RB](#), [Coule PL](#), [Pirrallo RG](#). [Prehosp Emerg Care](#). 2010 Jan-Mar;14(1):21-5. Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee, Wisconsin 53226, USA. eblerner@mcw.edu
- **SALT mass casualty triage: concept endorsed by the American College of Emergency Physicians, American College of Surgeons Committee on Trauma, American Trauma Society, National Association of EMS Physicians, National Disaster Life Support Education Consortium, and State and Territorial Injury Prevention Directors Association.** [Disaster Med Public Health Prep](#). 2008 Dec;2(4):245-6.

Resources (cont.)

- ◎ **Triage in mass casualty incidents: challenges and controversies.** [Am J Disaster Med.](#) 2007 Mar-Apr;2(2):57. [Briggs S.](#)
- ◎ **Mass casualty triage: an evaluation of the science and refinement of a national guideline.** [Lerner EB, Cone DC, Weinstein ES, Schwartz RB, Coule PL, Cronin M, Wedmore IS, Bulger EM, Mulligan DA, Swienton RE, Sasser SM, Shah UA, Weireter LJ Jr, Sanddal TL, Lairet J, Markenson D, Romig L, Lord G, Salomone J, O'Connor R, Hunt RC.](#) [Disaster Med Public Health Prep.](#) 2011 Jun;5(2):129-37. Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee, WI 53226, USA. eblerner@mcw.edu