Pediatric Assessment Skills

30 Second Assessments
60 Second MCI Triage

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Why do kids scare us?????

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

"We fear things in proportion to our ignorance"

Christian Nestell Bovee

Blink: The Power of Thinking Without Thinking

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
- Abnormal

Breathing
- Normal
- Abnormal

RESPIRATORY DISTRESS

RESPIRATORY FAILURE

PAT Physiology

Appearance
- Abnormal

Breathing
- Abnormal

RESPIRATORY FAILURE
PAT Physiology

Appearance Abnormal
Breathing Normal
Circulation

NEUROLOGIC DYSFUNCTION

PAT Physiology

Appearance Abnormal
Breathing 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

Medical Disaster vs MCI

Part 2
MCT: Mass Casualty Triage

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 afternoon in your ED, there are 23 level 4 and 5 patients in the waiting room, all ED rooms are full and 4 non-critical ambulances are on the way.
  - **Scenario 2:** It’s Saturday afternoon in your ED, there are 23 level 4 and 5 patients in the waiting room, all ED rooms are full, there are 4 non-critical ambulances waiting to unload and then The Viper Thrill Ride at the Smokey Point Carnival explodes with a debris field of 0.5 mile (crowd 15,000) All area ER’s are full. EMS is overwhelmed. Patients are walking/carrying/driving to ANY healthcare facility or clinic. There are 150 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

MCI GOALS

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

Point 2:
MCI Triage algorithms are NOT perfect, but they ARE important.
START
Simple Triage and Rapid Treatment
1983
• One of the most common mass casualty triage systems in the US. (default “national standard”)
• Based RPM: Resp Rapte, Perfusion, Mental 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 breaths
– Different parameters for RR and MS (AVPU)

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

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

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

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
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.**

SALT
Sort, Assess, Lifesaving Measures, Treat/Transport

- **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 2
Sepsis
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.

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.
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

Resources

• 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. eblerner@mcw.edu

Thank You

Questions?