Emergency Preparedness
ED Disaster Education

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Objectives

• Define a Mass Casualty Incident, START, and JumpSTART
• Discover the ethical dilemma of Disaster Triage
• Differentiate between various levels of Disaster Triage using the START/JumpSTART algorithm
• Explain START/JumpSTART
• Apply START/JumpSTART to determine appropriate Disaster Triage level
• Reflect on disaster education learnings to prepare for future disaster events
Mass Casualty Incident (MCI)

A situation that overwhelms emergency medical services (EMS) and other healthcare resources due to the number and severity of casualties.
What is START?

START – Simple Triage And Rapid Transport

A method of disaster triage that involves making a rapid assessment of every presenting casualty, determining which of five triage categories the casualty should be assigned, and then identifying the categories by color coding.
What is JumpSTART?

A method of disaster triage specifically developed for children, that involves making a rapid assessment of every presenting casualty, determining which of the five triage categories the casualty should be assigned, and then identifying the categories by color coding.
An Ethical Dilemma

The ethical principle of disaster triage is to do the GREATEST GOOD for the GREATEST NUMBER of casualties (Hammond & Zimmerman, 2013).

Resources will be allocated to those individuals who have the most emergent presenting condition, but also to those who are the most salvageable.
The Emergency Severity Index (ESI) Five Level Triage System is **NOT** used during a disaster.
Summary of START/JumpSTART Disaster Triaging

5 color system with RED being the most acute

Establishes how quickly the patient should be seen

Multiple major decision points
Casualties Overwhelm Available Resources

Triage Category Assessment

IMMEDIATE  DELAYED  MINIMAL  EXPECTANT  DEAD

Goal of Disaster Triage:
Do the greatest good for the greatest number of potential survivors
Highest priority of casualties to receive care

Immediate, life-threatening conditions

Require immediate management in order to survive
DELAYED

Require prompt medical attention for survival

Condition can tolerate a short delay in treatment

Expected to survive despite that short delay
MINIMAL

Minor injuries or illnesses

Expected to survive even if medical treatment not received
Casualties with low probability of survival
Not expected to survive given available medical resources
Casualties with complete absence of life

Not breathing after basic airway-opening maneuvers, including two rescue breaths if a child

Attempt basic life-sustaining efforts only if sufficient personnel available

It is important to *NOT* move dead casualties, unless the remains are blocking access to live casualties.
# Triage Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>Requires immediate care for a good probability of survival</td>
</tr>
<tr>
<td>Delayed</td>
<td>Requires care that can be safely delayed without affecting probability of survival</td>
</tr>
<tr>
<td>Minimal</td>
<td>Sick or injured but expected to survive with or without care</td>
</tr>
<tr>
<td>Expectant</td>
<td>Alive, but with little or no chance of survival given current available resources</td>
</tr>
<tr>
<td>Dead</td>
<td>A fatality with no intrinsic respiratory drive</td>
</tr>
</tbody>
</table>
Simple Triage And Rapid Transport

Pediatrics: JumpSTART

Adapted START/JumpSTART Triage Algorithm

- Able to Walk? Yes → MINOR → Secondary Triage
  - No → Spontaneous Breathing? Yes → Position (open) away
    - No → Breathing
      - Aspiric
        - Adult: Pulse palpable or signs of perfusion (check for less than 10 seconds)?
          - No → Pediatric (PEDS)
            - Pulse palpable or signs of perfusion? Yes → DECEASED
              - No → EXPECTANT
                - Yes → Give 6 Rescue Breaths
                  - Spontaneous Breathing? No → Pulse palpable or signs of perfusion (check for less than 10 seconds)
                    - Yes → DECEASED
                      - No → EXPECTANT

- Respiratory Rate
  - >30 Adult
    - <15 or >45 PEDS
      - Absent radial pulse or capillary refill > 2 ADULT
        - No palpable pulse or capillary refill > 2 PEDS
          - Not obeying appropriate commands (A, V, P)
            - Obeys commands (A, V, P) → DELAYED

- Mental State (AUPU)
  - Immediate

Disaster Reassessment Cycle
- AVPU SCALE: alert, voice, pain, unresponsive

- JumpSTART requires:
  - All children who did not walk under their own power be evaluated FIRST
  - Follow the pediatric (PEDS) recommendations for all individuals who “appear to be children” or have no secondary sex characteristics (breast development, facial hair)

Triage Categories
- DECEASED
  - Back Triage TAG
    - A fatally with absence of life

- EXPECTED
  - Grey Triage TAG
    - Low probability of survival given available medical resources
    - Should be re-assessed if additional resources become available

- IMMEDIATE
  - Red Triage TAG
    - Requires immediate intervention within 0 or up to 60 minutes for survival
    - Compressed airway, breathing and circulation

- DELAYED
  - Yellow Triage TAG
    - Interactions can be delayed
    - May be serious and potentially file threatening injuries, but status is not expected to deteriorate significantly over several hours

- MINORS
  - Green Triage TAG
    - Relatively minor injuries
    - Status unlikely to deteriorate over days
    - May be able to assist in own care; walking wounded
Let’s Practice!

Scenario…

Begin…
10-year-old Male

Complains of Lower Abdominal Pain

Ambulatory

Pulse: 84

Respirations: 22

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
21-year-old Female

Non-Ambulatory

Chest and Back Pain

Pulse: 62

Respirations: 32

Choose the Appropriate Category:

A. Red

B. Yellow

C. Green

D. Grey

E. Black
A. Red
84-year-old Female

Agonal Breathing

Flail Chest

Not Following Commands

Pulse: 44

Respirations: 66

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
D. Grey
6-year-old Male

Non-Ambulatory

Complains of Left Leg Pain

Pulse: 100

Respirations: 28

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
B. Yellow
17-year-old Male

Choose the Appropriate Category:

Non-Verbal

Tracks with Eyes

Not Following Commands

Pulse: 88

Respirations: 56

A. Red
B. Yellow
C. Green
D. Grey
E. Black
A. Red
41-year-old Male  
Non-Ambulatory  
Bilateral Below-the-Knee Amputation  
Pupils 6mm and Sluggish  
Pulse: 51  
Respirations: 6

Choose the Appropriate Category:

A. Red  
B. Yellow  
C. Green  
D. Grey  
E. Black
A. Red
14-year-old Female
Ambulatory
Not Following Commands
Blood from Bilateral Ears
Pulse: 112
Respirations: 48

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
A. Red
40-year-old Male

Complains of Chest and Abdominal Pain

Ambulatory

Pulse: 76

Respirations: 18

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
C. Green
2-year-old Male

Choose the Appropriate Category:

Crying

Shrapnel Intrusion Noted to Right Forearm

Pulse: 120

Respirations: 30

A. Red
B. Yellow
C. Green
D. Grey
E. Black
C. Green
27-year-old Female

Bilateral Hand Amputations-Bleeding Controlled

Alert and Oriented x 4

Pulse: 87
Respirations: 24

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
B. Yellow
21-year-old Female

Penetrating Shards of Glass to Face

Pulse: 74

Respirations: 20

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
C. Green
56-year-old Male

Left Flank Pain
Burns to Left Flank
Burns/Soot in Mouth

Pulse: 78
Respirations: 32

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
A. Red
3-year-old Female

Non-ambulatory

Partial Thickness Burns to Face and Torso

Capillary Refill > 2 seconds

Pulse: 134

Respirations: 47

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
A. Red
38-year-old Female  Choose the Appropriate Category:

Fall from Significant Height  A. Red
Not Following Commands  B. Yellow
Pulse: 156  C. Green
Respirations: 4  D. Grey
E. Black
20-year-old Male

Non-Ambulatory

Spontaneous Breathing

Unresponsive

Deep Tissue Burns

Pulse: 67

Respirations: 8

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
A. Red
28-year-old Female

Complains of Lower Back Pain  A. Red
Burns to Upper Extremities  B. Yellow
Limping, Staggering Gait  C. Green

Pulse: 82  D. Grey
Respirations: 28  E. Black
C. Green
42-year-old Male

Choose the Appropriate Category:

Chest Pain: A. Red
Hemoptysis: B. Yellow
Agonal Breathing: C. Green
Shrapnel Noted in Center of Chest: D. Grey

Pulse: 74
Respirations: 8
D. Grey
16-year-old Male

Right Elbow Deformity

Ambulatory

Pulse: 74

Respirations: 16

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
C. Green
90-year-old Male

Non-Ambulatory

Non-Verbal

Period of Apnea

Pupils Fixed and Dilated

Pulse: 76

Respirations: 32→4, 30→4

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black
D. Grey
55-year-old Female

Non-Ambulatory
Burns to Head and Face
Periods of Apnea (2-3 seconds)
Pulse: 98
Respirations: 64

Choose the Appropriate Category:
A. Red
B. Yellow
C. Green
D. Grey
E. Black
A. Red
40-year-old Male

Non-Ambulatory

Partial Thickness Burns to Face and Torso

Pulse: 94

Respirations: 50

Choose the Appropriate Category:

A. Red
B. Yellow
C. Green
D. Grey
E. Black