Principles of Triage During
A Mass Casualty Incident

MASS, START, Id-me, RPM

Introduction

My name is Ernie Husted

- Special Subject Instructor - Ohio Peace Officer Basic Training Program

- Member of OH-5 (Ohio DMAT) Disaster Medical Assistance Team

- WMD Technical Emergency Response Training (TERT) 2003 & 2007 (CDP)

- WMD Emergency Medical Services Training (CDP)

- 5 Hot COBRA Training Classes (CDP)

Objectives

- What is a Disaster ?

- Discuss a MCI (Mass Casualty Incident)

- Discuss the misconceptions over TRIAGE

- Discuss the principles of the MASS triage process

Objectives

- Discuss the principles of the S.T.A.R.T. triage process

- Explain the Id-me mnemonic for sorting patients

- Use of Triage Tags

- Practice Triage

What is a Disaster ?

- A natural or manmade event that suddenly or significantly disrupts normal community function & causes concern for the Safety, Property, & Lives of the citizens.

- Loss of life
- Loss of property
- Many injured or killed
- **Loss of control**

What is a Disaster ?

A disaster is an event that **exceeds** the **capabilities of the response.**

- A disaster is present when **needs exceeds resources**

- **Exceeds** the ability of the on-site responders or receiving hospitals to **treat and transport the casualties involved**
  - (**Moving Disaster**)

Disaster = Need > Resources

What is an MCI ?

- An MCI (Mass Causality Incident) is an **event** that **exceeds the health care capabilities** of the response.

- An MCI is **present** when **health care needs exceed resources.**

MCI = Healthcare Needs > Resources

MCI Challenges ?

Challenges faced:

– Mixed CBRNE and Non-CBRNE casualties

(Chemical, Biological, Radiological, Nuclear, Explosive)

– Responder protection and safety

– Crime scene management and evidence preservation

Self-Protection During an MCI

- Evaluate every situation before acting

- Perform quick incident scene survey

- Determine scene hazards

- Use appropriate PPE

- Remain in appropriate zone

Assess Hazards

- Power lines down

- Natural gas line rupture

- Structural collapse - falling objects

- Hazardous material

- NBC exposure

- Smoke or toxic inhalants

Assess Hazards

- Fires

- Explosions

- Secondary devices

- Snipers

- Several different locations

- Contaminated victims

Assess Hazards

MCI procedures

The first person / unit on the scene does:

- Visual size-up

- Establishes Incident Command

- Confirms incident location

- Practices the five S's;

The Five S's

– Size up the scene

– Scene assessment

– Send information

– Set up scene

– S.T.A.R.T.

Scene Safety

- Always try to work with a partner and remember "scene safety". If the scene isn't safe, don't go in

Rebecca Anderson

Licensed Practical Nurse

Husband & Four Children

Age 37 - killed

Scene Safety

- Responded to call for help at the Oklahoma City Bombing

- Struck on the head by concrete from collapsing building

- Died five days later

- She was the ONLY Rescuer Killed

Scene Priorities

- Protect yourself & your team members FIRST

- Protect the public

- Protect the patients

- Protect the environment

Scene Safety

Remember the difference between a

"rescue" and a "recovery"

What is the difference ?

WMD Weapons of Mass Destruction

Early Detection

- Rapid onset with little or no warning

- Victims with common symptoms

- Low lying clouds or vapors

- Dying animals or insects

- Concentrations of sick people at the scene

WMD Weapons of Mass Destruction

- Unexplained odors

Newly mown hay odor - **Phosgene**

"Clorox-like odor - **Chlorine**

Almond odor (disputed) or
Musty odor - Cyanide

WMD Weapons of Mass Destruction

<u>Phosgene</u> used extensively during WWI as a choking (pulmonary) agent, responsible for the large majority of deaths, also used as a major industrial chemical to make plastics

<u>Chlorine</u> was used during WW I as a choking agent, one of the most commonly manufactured chemicals in the US

<u>Cyanide</u> (Zyklon B) used by the Germans during WWII as a genocidal agent. Used in manufacturing paper, textiles & plastics

Disaster Triage

- Triage is derived from Old French word "trier" which means <u>"to sort"</u>

- A process for sorting injured people into groups based on their need for or likely benefit from immediate medical treatment. Triage is used in hospital emergency rooms, on battlefields, and at disaster sites when limited medical resources must be allocated (The American Heritage Dictionary)

Three Types of Triage

- MASS triage

- S.T.A.R.T. triage

- ADVANCED triage

Why so many types ?

- **MASS** triage - divides patients into triage categories ___based on their ability to move___

- **S.T.A.R.T.** triage - ___determines the severity of injuries___

- **Advanced** triage - more fully assess injury priorities

HOT ZONE   **MASS Triage**   **Contaminated Waste**

Emergency Treatment (If needed)   **Simple Triage**

Wind Direction

Responders

WARM ZONE

Log-in

Personal Property Decontamination

Technical Decontamination

Shielded Area

Ambulatory — Female

Clothing Removal

Cold Wash/Rinse

Soapy Wash/Warm Water Rinse

Survey

Clothing

Nonambulatory

Ambulatory — Male

Clothing Removal

Cold Wash/Rinse

Soapy Wash/Warm Water Rinse

Survey

Clothing

COLD ZONE

Debrief   **Advanced Triage**   Medical Treatment   **Transport**

MASS triage

- MASS triage stands for Move, Assess, Sort, & Send

- Performed in the hot zone

- Offensive responders wearing appropriate PPE

- Based on the patients ability to move and respond

MASS Triage (**Move,** **Assess,** Sort, Send)

Move: "Everyone who can hear me and needs medical attention, please move to a designated area now!"

(Green) Minimal or ambulatory

Assess: Nonambulatory "Everyone who can raise an arm or leg." Doing the most good for the most victims.

MASS Triage   (Move, Assess, **<u>Sort</u>**, Send)

- <u>Sort:</u>   Proceed immediately to remaining victims. Reassess!

  – Green (Minimal)

  – Yellow (Delayed)

  – Red (Immediate)

  – Black (Deceased or Expectant)

MASS Triage

- Triage is an ongoing process done many times

- MASS Triage just starts the process
  - Utilize triage ribbons (colored-coded strips) first

  - Tie the triage ribbon to a upper extremity, in a visible location (wrist if possible, preferably on the right)

MASS Triage

Independent decision should be made for each victim

- Do not base triage decision on the

  perception that there are too many RED's,

  not enough GREEN's, etc.

Remember

75 - 85% of fatalities

occur within first 20 minutes

What is Id-me ?

- A mnemonic for sorting patients during mass casualty incident triage. Most widely accepted international code for triage using colors

I - Immediate   (red)

D - Delayed   (yellow)

M - Minimal   (green)

E - Expectant   (black)

MASS Triage (Move, Assess, **Sort**, Send)

Green (Minimal)

- Ambulatory patients (no impaired function, can self-treat or be cared for my non-professional)

- "Walking Wounded"

- Abrasions, contusions, minor lacerations etc.

- *Military, (Routine) treatment within 24 hours*

MASS Triage (Move, Assess, **<u>Sort</u>**, Send)

Yellow (Delayed)

- **C**an wait for care after simple first aid

  (I.e., wounds dressed, splints applied)

- Clearly need medical attention, but should not decompensate rapidly if care is delayed.

- *Military, (Priority) treatment within 4 hours*

MASS Triage   (Move, Assess, **Sort**, Send)

Red (Immediate)

- **C**ritical (seriously injured, but have a reasonable chance of survival)

- Obvious threat to life or limb

- Complications in their ABC's

- *Military, (Urgent) treatment within 2 hours*

MASS Triage   (Move, Assess, **<u>Sort</u>**, Send)

Black (Deceased or Expectant)

- <u>Expectant</u>; This patient shows obvious signs of death.

- Included are

  – unresponsive patients with no pulse

  – or with catastrophic head injuries and / or chest injuries.

MASS Triage   (Move, Assess, **<u>Sort</u>,** Send)

Black (Deceased or Expectant)

- Most misunderstood & unpleasant component of triage

- All patients deserve care: Comfort care, when resources allow, should be provided ***

- All reds are gone, who goes next?

MASS Triage (Move, Assess, Sort, **Send**)

Send

- Send - victims are sent (evacuated) both safely & promptly to the decon area / or treatment area.

- Victims are treated and released at the scene.

- Send to hospitals or secondary treatment facilities

- Send to morgue facilities

S.T.A.R.T.

- Developed in California in the early 1980s by the Newport Beach Fire and Marine and the Hoag Hospital.

- Adopted by the Clark County Emergency Management Agency's Mass Casualty Planning Committee

- Adopted by the Greater Miami Valley Emergency Medical Services

S.T.A.R.T.

- START stands for Simple Triage & Rapid Treatment

- Rapid approach to triaging large numbers of causalities

- Occurs just inside the warm zone prior to decontamination to assess the victims & their injuries

Why S.T.A.R.T. ?

- Fast, East to use, Easy to remember
- Consistent
- Allows the most good for the most patients with the least amount of resources.

- First Step in S.T.A.R.T. is to separate victims into ambulatory & nonambulatory if not all ready done. (MASS)

Where to S.T.A.R.T.

Initial patient assessment & treatment should take less than one minute for each patient, 30 seconds is preferred

- First: clear the walking wounded using verbal instructions (if not all ready done using MASS triage)

  – "Anyone who can hear me and needs medical attention, please move to the area with the green flag."

  – Direct them to a treatment area or holding area

  – Tag these as MINOR   (green)

  – You have gathered ambulatory patients in to 1 group

Treatment

- These are the only treatments that occur during START:

  - Open the airway / insert OPA

  - Stop the bleeding.

  - Elevate the legs for shock.
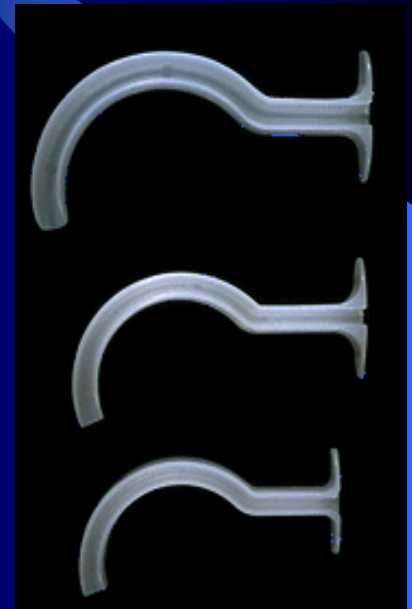
R.P.M.s - Patient Assessment

Patient assessment determines their initial category

- R - Respiratory Status

- P - Perfusion (pulse & blood flood)

- M - Mental Status

- The procedure is smooth and takes you from one check to another utilizing a "flow chart" type concept

30 - 2 - can do

R.P.M.s 30, 2, can do

- When things get hectic with multiple patients rev up your RPM's

- **<u>R</u>**   Respiration   > 30

- **<u>P</u>**   Perfusion   > 2 seconds

- **<u>M</u>** Mental Status CAN DO

R.P.M.s - <u>R</u> - respirations

<u>No Respirations:</u>

- open the airway - remove obstructions

    – Still none ?
      (DECEASED - Tag BLACK)

    – Breathing restored
      (IMMEDIATE - Tag RED)

R.P.M.s -   <u>R</u> - respiration**s**

  <u>Respirations Present:</u>

– Respirations <u>ABOVE</u> 30
   (IMMEDIATE - Tag RED)

– Respirations <u>BELOW</u> 30

 <u>   **move to checking perfusion**</u>

R.P.M.s -   P - perfusion

No Pulse:
(DECEASED - Tag BLACK)

- Radial Pulse absent or
  Capillary Refill (more) 2 seconds
        (IMMEDIATE - Tag RED)

- Radial Pulse Present or Capillary Refill
        (less) 2 seconds

move to checking mental status

R.P.M.s - M - mental status

CAN NOT Follow Simple Commands

Unconscious or

Altered Level of Consciousness

(IMMEDIATE - Tag RED)
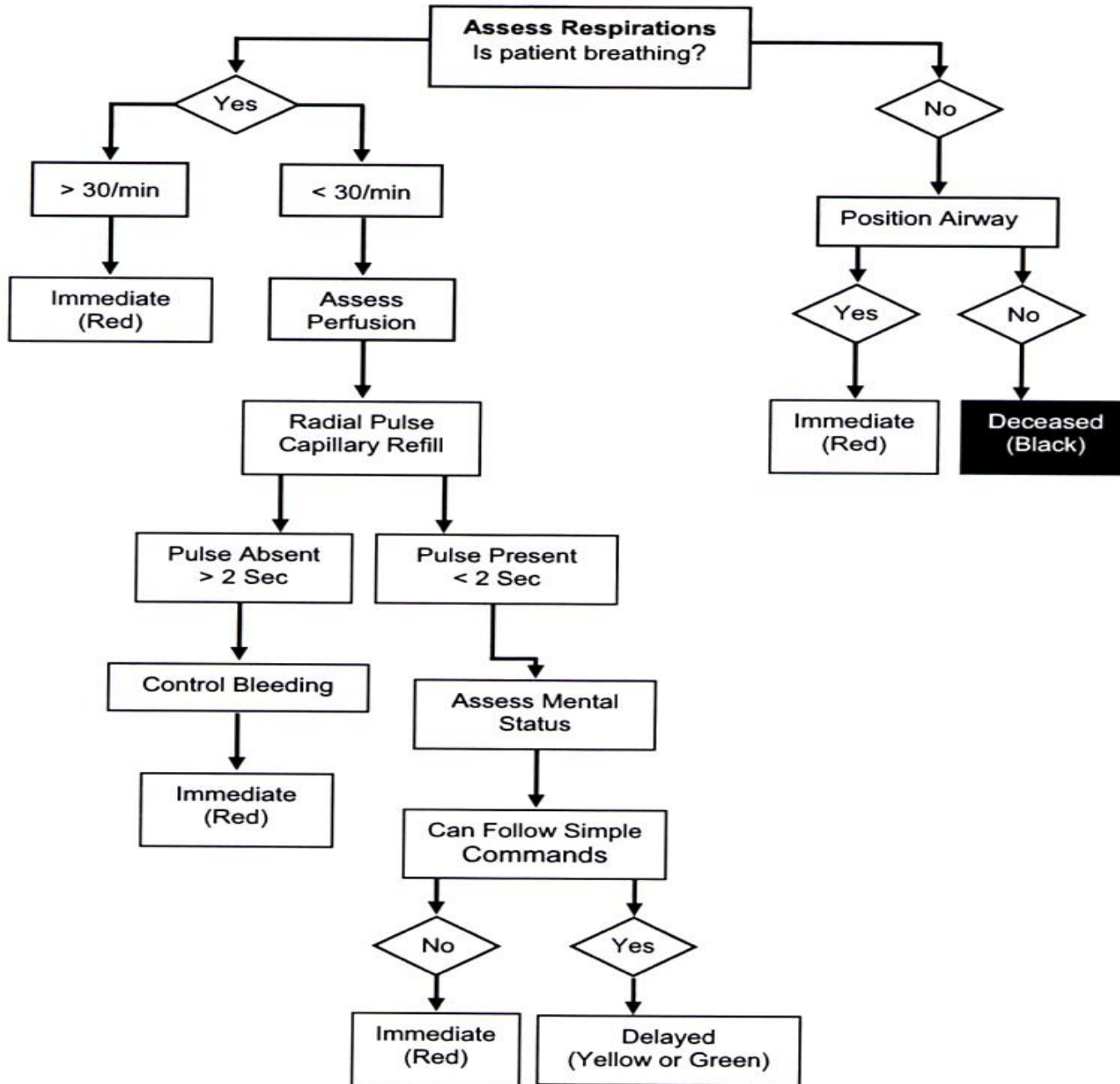

CAN Follow Simple Commands

(DELAYED - Tag YELLOW or GREEN)

R.P.M.s - <u>M</u> - mental status

Be sensitive to those who can't follow simple commands:

- may not speak English

- deaf

- hearing deficit

- mentally impaired normally

S.T.A.R.T.—Simple Triage and Rapid Treatment
Remember RPM (Respirations, Perfusion, Mental Status)

Assess Respirations
Is patient breathing?

- Yes
  - > 30/min → Immediate (Red)
  - < 30/min → Assess Perfusion
    - Radial Pulse Capillary Refill
      - Pulse Absent > 2 Sec → Control Bleeding → Immediate (Red)
      - Pulse Present < 2 Sec → Assess Mental Status
        - Can Follow Simple Commands
          - No → Immediate (Red)
          - Yes → Delayed (Yellow or Green)
- No → Position Airway
  - Yes → Immediate (Red)
  - No → Deceased (Black)

Triage

- If borderline decision are encountered, always triage to the most urgent priority

- Example: If unsure whether the patient is green or yellow, the patient should be tagged yellow

Advanced Triage

- Advanced Triage will be performed on all victims in the Treatment Area by medical teams

- Utilize the Triage Tags and attempt to assess for and complete all information required

  (as time permits)

- The Triage priority determined **in the Treatment Area** should be the priority used for transport

Special Considerations

- The FIRST assessment that produces a RED tag stops further assessment

- Only corrections of life-threatening problems should be managed during triage (i.e. airway obstruction or severe bleeding)

Special Considerations

- To initially mark patient categories, colored (ribbons) should be considered

- When using Triage Tags, if the patient's condition or the triage priority changes, the bottom portion of the tag should be removed, leaving only the injured information

  - Add a new tag to identify the new triage priority, and if time permits, the reason for the change

Triage Reminders

1. You DO NOT decide who lives or dies

2. The sooner your start Triage the sooner the medical care process starts

3. Triage is an ongoing process that is repeated many times

4. If you forget any of the above rules, go back to rule number 1.

Let's Practice

There has been an explosion and it is a MCI

- Bob is a 25 yr. old male
- He is able to follow commands but has trouble hearing
- His Cap Refill is < 2 seconds
- His Radial Pulse is nonexistent
- Can't move due to a compound left femur fracture
- Respirations are > 30 and he is coughing

What color tag is he and why ?

Let's Practice

- Respirations are > 30 and he is coughing

  RED TAG

- His Cap Refill is < 2 seconds
- His Radial Pulse is nonexistent
- He is able to follow commands but has trouble hearing

- Bob is a 25 yr. old male
- Can't move due to a compound left femur fracture

Let's Practice

The scene is a MCI

- Mary is a 21 yr. old female
- She is able to follow commands but is scared
- Her Cap Refill is < 2 seconds
- She has a radial pulse
- Respirations are < 30 with shortness of breath
- She has a sudden onset of chest pain

What color tag is she and why ?

Let's Practice

- Respirations are < 30 with shortness of breath
- Her Cap Refill is < 2 seconds
- She has a radial pulse
- She is able to follow commands but is scared

- She has a sudden onset of chest pain

- Mary is a 21 yr. old female

    What color tag is she and why ?

Let's Practice

The scene is a MCI

- Mary is a 21 yr. old female
- She is able to follow commands but is scared
- Her Cap Refill is < 2 seconds
- She has a radial pulse
- Respirations are < 30 with shortness of breath
- She is 6 months pregnant

What color tag is she and why ?

Let's Practice

The scene is a MCI

- Ann is a 35 yr. old female
- Glossy sheen to exposed skin
- She is alert
- Her Cap Refill is < 2 seconds
- Respirations are 16
- Cut (Rt) forearm, minimal bleeding
- Some white glowing powder seen on casualty

What color tag is she and why ?

Let's Practice

- Respirations are 16
- Her Cap Refill is < 2 seconds
- She is alert

- Cut (Rt) forearm, minimal bleeding
- Ann is a 35 yr. old female
- Glossy sheen to exposed skin

- Some white glowing powder seen on casualty

What color tag is she and why ?

Let's Practice

The scene is a MCI

- Linda is a 23 yr. old female
- She is alert
- Impaired vision
- Her Cap Refill is < 2 seconds
- Respirations are 31 - tightness of chest
- Unexplained runny nose
- "Smelled a new mown hay fragrance"

What color tag is she and why ?

Let's Practice

The scene is a MCI

- Respirations are 31 - tightness of chest

- Unexplained runny nose
- "Smelled a new mown hay fragrance"

- Linda is a 23 yr. old female
- She is alert
- Impaired vision
- Her Cap Refill is < 2 seconds

What color tag is she and why ?

Summary

- What is a Disaster ?

- Discussed a MCI (Mass Casualty Incident)

- Discussed the misconceptions over TRIAGE

- Discussed the principles of the MASS triage process

Summary

- Discussed the principles of the S.T.A.R.T. triage process

- Explained the Id-me mnemonic for sorting patients

References:

- Office for Domestic Preparedness, Technical Emergency Response Training manual (TERT)

- American Medical Association - Advanced Disaster Life Support manual

- Greater Miami Valley Emergency Medical Services Council, 2008 Standing Orders Training Manual

In our next session

- We will:

  – Learn about Triage Tags

  – Practice Triage