

Acute Trauma Care

Triage and Transfer to Definitive Care



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**WITH THANKS TO TOM
SANDERSON, MD, FACEP**

No Conflict of Interest

Objectives

- Give reasons for triage and principles
- Identify distracters to good triage
- Know the four categories of triage
- Identify need to transfer patients
- Initiate procedure for safe transfer
- Elements of a good mass casualty plan

Triage

- By definition, you do not have enough resources and do not have the ability to make all diagnoses
- You must make hard decisions, know why you made them and have a pre-thought out approach to make it work
- Your hospital should have a protocol in place!

Triage

Prioritization of patient care based on

- Severity of illness/injury
- Prognosis
- Availability of resources (including people & their skill set)

Write recognized injury on tag



Triage in Mass Casualty

Accomplish the Most good
For the Most people



Triage Categories

- Red
- Yellow
- Green
- Black



Red

- Put diagnosis and injury on tag
- First priority
- Most urgent
- Life-threatening shock or hypoxia is present or imminent, but the patient can likely be stabilized and if given immediate care, will probably survive

Yellow

- Second priority
- Urgent
- The injuries have systemic implications or effects, but patients are not yet in life-threatening shock or hypoxia; although systemic decline may ensue, given appropriate care, can likely withstand a 45- to 60-minute wait without immediate risk.

Green

- Third priority
- Non-urgent
- Injuries are localized without immediate systemic implications; with a minimum of care, these patients generally are unlikely to deteriorate for several hours, if at all

Dead or Black Label

- Dead
- No distinction can be made between clinical and biologic death in a mass casualty incident, and any unresponsive patient who has no spontaneous ventilation or circulation is classified as dead. Some place catastrophically injured patients who have a poor chance for survival regardless of care in this triage category.

Mass Casualty Triage

It is dynamic and always changing

Changes can be due to

- Increase in the number of patients
- Increase in the number of doctors or medical personnel
- Decrease in the number of doctors or medical personnel
- Loss of the ED or hospital
- Loss of power or services

How to triage “easily”?

- ABCDE
- Practice scenarios later in presentation

Communications

One of the largest problems in mass disasters is effective communication

- No modern communication is a common occurrence
- What is available is not utilized efficiently
- There are little or no records available or generated

Lab and X-Ray

- In mass casualty radiology and laboratory should be used sparingly
- For example, closed fractures would simply be splinted and definitive care could be delayed for 24-48 hours unless there is vascular compromise
- Labs should be limited to H/H, T&C, and UA dipstick

Who should be transported?

- Those whose needs exceed your institutions capabilities
- Those with multiple injuries
- Those with co-morbidity
 - Extremes of age
 - Pre-existing diseases

Patient Transfer Principles

- Know your institutional capabilities
- Be prepared, anticipate patient needs
- Do no further harm
- Identify patients whose need exceed local resources
- Perform only essential procedures that are needed for safe transport and stabilization

Evaluate Available Transport Options



Patient Transfer Guidelines

- Establish direct communication between referring and receiving doctors
- Transport to closest, appropriate facility
- Use the most appropriate mode of transport available

When should the patient be transferred?

- After life-threatening problems are managed
- After disabling injuries are stabilized
- After transfer is arranged
- Before performing unnecessary tests and procedures
- Avoid delay!

Transfer Form Essentials

Be sure and include the following:

- Patient information
- Date and times
- AMPLE information
- Condition on admit
- Probable Diagnosis
- Studies done
- Treatment given
- Status on transfer
- Transport management
- Referring site information
- Receiving site information; especially doctor accepting patient

Transfer to Definitive Care

Pitfalls

1. Tubes may be dislodged or malpositioned
2. Hemodynamic/neurologic deterioration
3. Failure to include x-rays, data, transfer summary
4. Do not delay transfer with diagnostic studies or lab results

Summary

1. Do no harm
2. Know capabilities of staff/hospital
3. Know indications for transfer
4. Direct doctor to doctor communication
5. Stabilize before transfer
6. Use skilled transfer personnel

How Does a DW Setting Affect These?

1. Do no harm
2. Know capabilities of staff/hospital
3. Know indications for transfer
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Small Group Exercises

- Groups of approximately 6 people
- Assume : only doctor in a 100 bed district hospital in the country of Malitania on the continent of Afriasia. You have only 1 nurse and 1 aide to help you
- Gathering more on each case uses time that may result in the death of others.

Triage Scenario 1

- Only doctor – 100 bed district hospital
 - 1 nurse and 1 aide to help you
- Single motor vehicle crash – 100 kph
- The mutatu (tap-tap, taxi) dumps all five patients simultaneously

Patients in Scenario 1

- A – 45 yo M (driver). Severe respiratory distress from maxillofacial trauma, broken arm and chest abrasions. BP 150/80, HR 120, RR 40 GCS 8
- B – 38 yo F ejected 9 meters. Alert, c/o abd. & chest pain. Unstable pelvis. BP 110/90, HR 140, RR 25
- C – 48 yo M, found under car, no breath sounds on L, tender abd., multiple abrasions 90/50, HR 140, RR 35, GCS 10
- D – 25 yo F, hysterical, 8 mo pregnant, abrasions to face and anterior abdomen, in active labor BP 120/80, HR 100 and RR 25
- E – 6 yo M, was alert and talking; now responds to painful stimuli by crying out. Right LE fractured, dried blood around nose and mouth BP 110/70, HR 180 and RR 35

Triage Scenario 2

- Gas explosion during a renovation at a local factory. Five workers are transported at once.

Patients in Scenario 2

- Patient A – a young man screaming “Please help me, my leg is killing me”
- Patient B – young woman is cyanotic; tachypneic and breathing very noisily
- Patient C – 50 year old man lying in pool of blood with left trouser leg soaked with blood. He is recognized as a local pastor.
- Patient D – A young man is lying face down on a stretcher and not moving
- Patient E – Young man, swearing and shouting that someone should help him or he will call his advocate (lawyer) and tell his father (the Minister of Health)

Triage Scenario 3

- Explosion of a propane tank and resultant fire in a house. All are members of the same family

Patients in Scenario 3

- A - 45 yo man coughing, expectorating soot-stained sputum. Burns on face, head and hands BP 120 sys, HR 100, RR 30
- B – 6 yo girl, crying. c/o burns on back, buttocks and posterior legs BP 110/70, HR 100, RR 30
- C – 70 yo M, coughing, wheezing and coughing up soot. Voice hoarse, responds to pain only. Burns of abdomen, chest and legs (circumferential). BP 80/40, HR 140, RR 35
- D – 19 yo F, obtunded, pain with movement of right humerus and leg. Thigh is swollen. BP 140/90, HR 110, RR 32
- E – 45 yo M, pale, c/o pain in pelvis. Obvious fracture with abdominal distension. Blisters of chest, abdomen and walls. Laceration of forehead. BP 130/90, HR 90, RR 25

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Triage Priorities – Scenario 1

- A – Major upper airway obstruction
- C – Tension pneumothorax
- E – Significant head trauma and need to protect airway
- B – History of ejection and pelvic fracture – risk of multiple injuries and shock
- D – Active labor. Once stabilized, look for fetal distress. Not life-threatening

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Triage in Scenario 2

- B – Airway
- D – Spine injury? Dead? Comatose? Airway?
- C – Blood loss
- A – ABCDE's normal; broken leg
- E – Conscious & alert. Breathing well enough to yell. r/o hypoxia or pneumo

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Triage in Scenario 3

- C – inhalational injury, severe burns, shock
- A – burns, probable inhalation
- D – Ortho injuries and possible chest and abdominal injuries. Decreased LOC - ? Need for airway
- E – Burns requiring fluids & transfer. Evaluation of abdomen and pelvis
- B – Extensive burns - transfer

Exercise 2

- You are part of a committee assigned the task of creating a mass casualty plan for your hospital in the developing world. As the first step, create a list of all the things that must be considered a part of such a plan.

Answers to Exercise 2

- Traffic flow pattern within hospital facility
- Discharge of non-critical patients
- Closing of ongoing clinics
- Handling crowds – family versus non-family (tags for family)
- Chaplaincy/Counseling for victims and family
- Post-event counseling for staff
- Morgue facilities
- Establishment of transfer guidelines
- Modes of transport and personnel for transfer to other facilities
- Availability of IVs, needles, syringes, drugs, plaster of Paris, tape and other disposable supplies
- Design of patient tag/chart and someone to trail doctor/nurse to document if necessary

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