الجامعة السورية الخاصة كلية الطب البشري قسم الجراحة

Disaster surgery

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LEARNING OBJECTIVES

Any event that results in the loss of human life is disastrous

To recognize and understand:

- The common features of various disasters
- The principles behind the organization of the relief effort and of triage in treatment and evacuation
- The role and limitations of field hospitals
- The features of conditions peculiar to disaster situations and their treatment

Range of Disasters

Natural disasters :

- >Floods .
- > Earthquakes .
- Forest burns .
- Depletion of the ozone layer (global warming)
- ويلات) The ravages <
- National conflicts and ideological differences.



Common features of major disasters

- Massive casualties
- Damage to infrastructure
- A large number of people requiring shelter
- Panic and uncertainty among the population
- Limited access to the area
- Breakdown of communication



Organisation chart for disaster management

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Sequence of Relief Efforts after a Disaster

- Establishing a chain of command (Management Authority).
- Damage assessment .
- Mobilizing resources .
- Rescue operation .
- Safety of the helpers .
- Dealing with the media .

Triage

The cornerstone of the management of mass casualties

- It determines who will be treated first.
- What mode of evacuation is best.
- Which medical facility is optimal for the management of the patient.
- Only 10–15% of disaster casualties are serious enough to require hospitalization.
- Sorting out the minor injuries.
- It is crucial that this task be undertaken by someone senior, who has the training and experience to make these crucial decisions.



Triage areas

- For efficient triage the injured need to be brought together at one location.
- Any undamaged structures that can accommodate and shelter a large number of wounded, such as school buildings and stadium, are suitable.
- A good water supply and ease of access.
- Areas should be reserved for patient holding, emergency treatment and decontamination.
- An area should be designated t serve as a morgue .

Practical triage

- Medical personnel should be of various specialties (Gen/Surg, Orthopedic, Anesthetist, well trained Nursing staff).
- The assessment and restoration of airway, breathing and circulation are critical .
- Vital signs .
- General physical examination .
- A brief history taken by a paramedic or volunteer worker if it is available.

Documentation for triage

- Accurate documentation .
- Basic patient data .
- Vital signs with timing .
- Brief details of injuries (preferably on a diagram).
- Treatment given.
- A system of color-coded tags attached to the patient's wrist or around the neck.



Time line showing the type of injuries encountered at different times in a disaster

Triage categories

criteria based on :

- vital signs .
- A rapid clinical assessment.
- Ability to walk .
- Mental status .
- The presence or absence of ventilation or capillary perfusion.

Evacuation of casualties

- Decisions regarding the best destination for each patient need to be based on how far it is safe for them to travel.
- The paramedics accompanying the casualties should be familiar with safe transport techniques.
- A patient with a spinal injury should be strapped to the spine board.
- Hard collar adjusted and the head fixed to the board with tape.
- Chest tubes, urinary catheters, endotracheal tubes tracheotomy tubes and intravenous lines must be properly secured.
- An adequate supply of essentials such as intravenous fluids, dressings, pain medication and oxygen must be arranged.





Field hospitals

- The location of the disaster .
- Number of casualties .
- The speed with which evacuation can be affected.
- It must be equipped with an X-ray plant .
- Operating rooms .
- Vital signs monitors .
- Sterilizing equipment .
- blood bank .
- Ventilators .
- Basic laboratory facilities.

Management in the field

- Type of treatment given in field hospitals
- First aid Suturing cuts and lacerations, splinting simple Review at local hospital fractures
- Emergency care for Endotracheal intubation, tracheotomy, relieving After damage control surgery, transfer patients
- Life-threatening injuries tension pneumothorax, stopping external to base hospitals once stable
- Hemorrhage, relieving an extradural hematoma,
- Emergency thoracotomy/laparotomy for internal hemorrhage
- Initial care for non- Debridement of contaminated wounds, reduction of Transfer patients to base hospitals for definitive
- Life-threatening injuries fractures and dislocations, application of external management fixators, vascular repairs

Principles of debridement and initial wound care

- Obtain generous exposure through skin and fascia
- Identify neurovascular bundles
- Excise devitalised tissue
- Remove foreign bodies
- Repair major vessels
- Obtain skeletal stabilisation with external fixators
- Only tag cut tendons and nerves
- Leave wound open and delay primary closure
- Avoid tight dressings
- Elevate injured limb.
- Tetanus .
- Gas gangren .